

ENDANGERED SPECIES—Part 1

HEARINGS
BEFORE THE
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT
OF THE
COMMITTEE ON
MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES
NINETY-FIFTH CONGRESS
SECOND SESSION
ON

Endangered Species Authorization—H.R. 10883
A BILL TO AUTHORIZE APPROPRIATIONS TO CARRY OUT THE
ENDANGERED SPECIES ACT OF 1973 DURING FISCAL YEARS
1979, 1980, AND 1981

FEBRUARY 15, 1978

Endangered Species Oversight

MAY 24, 25, JUNE 1, 15, 16, 20, 23, AND 28, 1978

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ENDANGERED SPECIES AUTHORIZATION

WEDNESDAY, FEBRUARY 15, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT OF THE
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:15 a.m., in room 1334, Longworth House Office Building, Hon. Robert L. Leggett presiding.

Mr. LEGGETT. All right, the meeting of the Subcommittee on Fisheries and Wildlife Conservation and the Environment will please come to order.

We are holding hearings this morning on H.R. 10883. This legislation would authorize appropriations to carry out the Endangered Species Act through fiscal year 1981.

The Endangered Species Act was enacted in 1973 to provide expanded protection for endangered species of fish, wildlife, and plants. The act stands as the most far-reaching Federal effort to slow and prevent the destruction of hundreds of wildlife species that are facing extinction as a result of man's activities.

There are currently 658 species listed as endangered or threatened. Another 112 animal species and 1,800 plant species are proposed for listing.

The President's budget for fiscal year 1979 recommends a \$16,422,000 appropriation to the Department of the Interior and a \$2,226,000 appropriation to the Department of Commerce to carry out their responsibilities under the act. The recommendation for the Department of the Interior represents a \$3.8 million increase over the amount appropriated in fiscal year 1978. Nearly all of this increase would be allocated to carry out section 7 of the act. Section 7 requires Federal agencies to insure that their actions do not jeopardize the continued existence of endangered species or destroy their critical habitat.

Section 7 has created a considerable amount of controversy since the 6th Circuit Court of Appeals enjoined the completion of the Tellico Dam on the grounds that the dam would destroy the critical habitat and jeopardize the existence of the snail darter. The 6th Circuit Court decision is currently under review by the Supreme Court. I do not intend to consider the critical habitat question here today beyond an investigation of the President's budget request. The subcommittee does hope to schedule extensive oversight hearings on this issue at a later date.

I understand that the Department of the Interior plans to fund the creation of 20 section 7 consultation teams with \$2.8 million of

its anticipated budget increase. These teams will provide technical assistance to other Federal agencies on endangered-species conflicts. The efficient operation of these consultation teams is vital if future Tellico Dam conflicts are to be avoided.

Unfortunately, while the President has recommended funding for these consultation teams, additional personnel ceilings have not been provided. Thus, the Department plans to use part-time personnel for this all-important task.

It seems that these teams need the best people available to work out endangered species conflicts before they develop into a crisis. We are simply not confident that part-time personnel will be able to effectively carry out this sensitive task.

[The bill follows:]

95TH CONGRESS
2D SESSION

H. R. 10883

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 9, 1978

Mr. MURPHY of New York (for himself, Mr. LEGGETT, Mr. FORSYTHE, Mr. HUBBARD, and Mr. HUGHES) introduced the following bill; which was referred to the Committee on Merchant Marine and Fisheries

A BILL

To authorize appropriations to carry out the Endangered Species Act of 1973 during fiscal years 1979, 1980, and 1981.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That section 15 of the Endangered Species Act of 1973
4 (16 U.S.C. 1542) is amended—

5 (1) by amending paragraph (1) —

6 (A) by striking out “and” immediately after
7 “1976,” and

8 (B) by inserting immediately after “1978,” the
9 following: “and not to exceed \$37,500,000 for the
10 period beginning October 1, 1978, and ending Sep-
11 tember 30, 1981,”; and

- 1 (2) by amending paragraph (2)—
2 (A) by striking out “and” immediately after
3 “1976,” and
4 (B) by inserting immediately after “1978,”
5 the following: “and not to exceed \$7,500,000 for
6 the period beginning October 1, 1978, and ending
7 September 30, 1981.”

Mr. LEGGETT. So we have scheduled for testimony this morning Director Greenwalt of the U.S. Fish and Wildlife Service, Department of the Interior; Jack Gehringer, Department of Commerce; Tom Garrett, Defenders of Wildlife; Ms. Elizabeth Kaplan, Friends of the Earth; Mrs. Christine Stevens, Society for Animal Protective Legislation; and Ms. Ann Graham, National Audubon Society.

So, Mr. Greenwalt, we are very pleased to have you here, and you may make whatever statement you care to.

STATEMENT OF LYNN A. GREENWALT, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR; ACCOMPANIED BY KEITH SCHREINER, ASSOCIATE DIRECTOR, FEDERAL ASSISTANCE, DEPARTMENT OF THE INTERIOR

Mr. GREENWALT. Thank you, Mr. Chairman.

I appreciate this opportunity to appear before you to discuss the administration's proposal to extend and increase the authorization of appropriations in section 15(1) of the Endangered Species Act of 1973.

With your permission, I have a more detailed statement for submission to the record, and I will present a summary now.

Mr. LEGGETT. The statement will be included as if you read it. [The following was received for the record:]

STATEMENT OF LYNN A. GREENWALT, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE

Mr. Chairman, I appreciate the opportunity to appear here today to testify on the Administration's proposal to extend and increase the authorization of appropriations in section 15(1) of the Endangered Species Act of 1973. This section authorizes appropriations to the Department of the Interior to carry out functions and responsibilities under the act other than land acquisition and grant-in-aid to the States.

Man's activities threaten a growing number of species with extinction, and it appears that the number has increased at a rate paralleling human population growth. Congressional concern about rapidly deteriorating fish, wildlife and plant habitat, over-exploitation of plants and animals, and the increasing number of species threatened with extinction resulted in a series of legislative actions culminating in enactment of the Endangered Species Act of 1973, signed into law December 28, 1973 (16 U.S.C. 1531-1543; 87 Stat. 884). The primary purpose of the endangered species program, as directed by the 1973 act, is to provide a means whereby endangered and threatened plant and animal species may be conserved.

The act repealed the Endangered Species Conservation Act of 1969 (83 Stat. 275), broadened Federal responsibilities to list species and increased Federal authorizations and programs for insuring the survival of species. The 1969 act authorized the

Federal listing as endangered any animal determined to be faced with worldwide extinction. The 1973 act authorizes the Federal listing of plants in addition to animals, and covers animals not previously considered (arthropods and other invertebrates). It provides considerable flexibility in listing species as either threatened or endangered and affording the species commensurate protection in all or part of their range. It provides the authority to act before a point of no return is reached.

Section 15 of the act originally authorized the Department of the Interior an amount not to exceed \$4 million in fiscal year 1974, \$8 million in fiscal year 1975, and \$10 million in fiscal year 1976. An amendment in 1976 (Public Law 94-325) extended the authorization at an amount not to exceed \$1.8 million for the transition period, July 1, 1976, through September 30, 1976, and \$25 million for fiscal year 1977 and fiscal year 1978. Our proposed amendment would extend the authorization at an amount not to exceed \$17 million for fiscal year 1979 and authorized such sums as are necessary for fiscal year 1980. This is consistent with the President's current budget request of \$16.4 million.

When the Endangered Species Act became law thousands of endangered and threatened animal and plant species throughout the world, both listed and unlisted, became potential Federal responsibilities. The Departments of the Interior and Commerce assumed major new duties for assuring the perpetuation of our rich heritage of plants, fish and wildlife. The goal of the Act is to protect the grizzly and the bald eagle, as well as the snail darter and the El Segundo blue butterfly. It includes protection of plants as well as animals because the world's intricate ecological balance depends upon them both.

Mr. Chairman, if we are to preserve the magnificent species with which everyone identifies, such as the bald eagle or the Peregrine falcon, the forms of life that make up their food chain must be preserved as well. An example of this is our work with the apple snail in Florida. We are constructing ponds—habitat—for this snail, not because it is endangered or threatened but because it is almost the sole food source for the Everglades kite, an endangered bird of prey. Similarly, we have proposed listing the banded dune snail as endangered. This seemingly insignificant snail is a major food source for the Morro Bay kangaroo rat and its scarcity may account for that animal's endangered status. This inter-relationship of life forms is recognized by the Act and often it is only through this ability to provide protection to the full spectrum of animal life that we are able to afford protection to any particular species. Put more simply, we protect species for their own value and also for their value in what has been called the "web of life".

Preserving a diversity of species can bring enormous utilitarian benefits. Existing livestock breeds could be improved through hybridization with related species from the wild. In fact, there is still the possibility of completely new breeds of domesticated work animals. Guyana is currently experimenting with the manatee or "sea cow" as a means of clearing noxious aquatic weeds from inland waterways.

Animal physiology has assisted research into human ailments. For example, the stormy petrel, the albatross, and other long-flying birds have aided in our understanding of human heart malfunctioning. The endangered desert pupfish, with its remarkable tolerance to temperature change and salinity, might afford clues into kidney disease. Plants form the basis for a wide range of drugs which are used to treat such disorders as cardiac stress, leukemia, and hypertension. Recently, a little-known sponge, found off the coast of the Bahamas, was discovered to contain the first substance truly effective in combating a viral disease. Our lives are enriched in countless ways by even the lowliest of life forms, but once a species becomes extinct its genetic composition and all of its potential values as a natural resource are lost to mankind forever.

The Endangered Species Act of 1973 provides a way to safeguard species and genetic reservoirs. In order to implement the Act we have carefully constructed an orderly base of procedures and supporting regulations to provide for an effective program of listing and reclassification, permit processing, cooperation with State conservation agencies, habitat acquisition, protection and enhancement of species on Service and other Federally administered lands, consultation on Federal activities that may affect listed species and assistance to other countries.

LISTING

All plant and animal species and lesser taxonomic groups, such as subspecies, other than insect pests, are covered by the 1973 Act. The Secretary is directed to undertake species status reviews on his own initiative as well as in response to petitions from interested persons. Determinations for listing a species or lesser taxa as either endangered or threatened throughout all or a portion of its range must be based on the best scientific and commercial data available. Unfortunately, little is

known concerning many species' life histories, habitat requirements, and the techniques to use for population status determinations. Lengthy and complex scientific research and field investigations are frequently involved in such work. The Act also directs specific consultation and coordination prior to listing; and describes criteria for the actual determination. Before any activities for protection and recovery of a species can take place, the determination and listing process must be completed.

As of December 28, 1973, there were 391 species listed as endangered. Today over 650 have been assigned either endangered or threatened status, including 282 mammals, 214 birds, 59 reptiles, 49 fishes, 26 mollusks, 16 amphibians, and 8 insects. The status of an additional 2,000 species is being reviewed. We hope to provide protection to an additional 600 species by the end of FY 1980. Although only 4 species of plants have been designated as endangered, with the establishment of 5 botanist positions in FY 1977 and 3 in FY 1978, it is expected that 200 species of flora will be listed by the end of FY 1979.

Success should not be measured by the number of species listed; the goal of the program is to return the species to the point where they are no longer endangered or threatened. The status of all listed species must be monitored in order that appropriate protective measures can be maintained. This Department would be just as negligent in the performance of its duties under the Act for not delisting or reclassifying a species that has or is recovering as it would be for not listing a critical species. We have not had the manpower or funding needed to review all the species which were listed at the time the 1973 Act was enacted. To date the status of 6 species has been reviewed and 4 have been reclassified. We have proposed altering the status of the eastern timber wolf and are reviewing several others, and with adequate funding we will be able to complete the review of all species listed prior to enactment of the 1973 law within the next two or three years.

PROTECTION

Section 9 prohibits the taking (except for plants), importing, exporting and interstate commerce of an endangered species or its products. Threatened species are protected by regulations prescribed by the appropriate Secretary.

It is better to keep an endangered animal from being killed than to apprehend the violator for the illegal killing, so a major portion of the Service's law enforcement effort is aimed at obtaining widespread voluntary compliance with the statute and regulations. We have carried out a major public education program to inform people specifically about the law and the need for compliance.

Another method of deterring violations is by maintaining the capability to enforce the laws and giving publicity to convictions. Our 220 special agents devote 25 percent of their time to investigating violations involving endangered species to eliminate illegal taking and traffic in endangered and threatened species. Surveillance and other intensive enforcement efforts are often directed at the most critical populations. Since enactment in 1973 the Service has initiated over 5000 investigations into known or suspected violations. Criminal prosecutions have resulted in the conviction of 245 individuals and over 500 civil actions have been concluded.

With the recent adoption of U.S. regulations to enforce the Convention on International Trade in Species of Wild Fauna and Flora, the number of investigations is expected to increase substantially. As an indication of this mounting workload, the number of investigations into known or suspected violations increased in FY 77 to 2523—a 50 percent jump over the previous fiscal year. The number of cases involving seizures of endangered animals or their products doubled in the last two years. The impact of the International Convention is especially evident in the number of seizures of elephant ivory. In FY 1976 our agents made 6 seizures; in FY 1977, some 4,000 ivory items were confiscated.

The Fish and Wildlife Service is now inspecting some 19,000 out of approximately 67,000 wildlife shipments a year at 8 designated ports of entry, border points and non-designated ports. To handle this volume we have recently hired a force of 35 full and part-time wildlife inspectors. These officers are specially trained to inspect shipments of live plants and animals as well as their parts and products. They have the authority to grant Service clearances for import or export if shipments meet all the requirements. Any irregularities discovered by the inspectors are referred to a special agent in the port city for a follow-up investigation.

Although the Act provides for prohibitions against the taking and trade of listed species, congress recognized that some uses of these species were necessary, proper and desirable. Permits for certain uses of threatened species may be allowed by regulation; and section 10 authorizes the issuance of permits for certain uses of species designated as endangered. Control of trade through a permit system is the fundamental mechanism of the Convention on International Trade in Endangered

Species of Wildlife Fauna and Flora. From July 1974 through December 1977 we considered 900 endangered species permits. In the past year, the Wildlife Permit Office has received 490 applications under the Convention. It is likely that the new regulations allowing possession of captive self-sustaining populations and the listing of plants will increase the number of permit applications received for processing. In fact, the Service projects a 10 percent increase in applications during the 1978 calendar year. Despite this constantly increasing workload we are trying to reduce the length of time it takes to process a permit application; our goal is to slash the current 120-day delay by half.

Pervasive habitat destruction is one of the main reasons species are threatened with extinction. Many of these endangerments can be prevented by the careful evaluation of land and water resource projects and the development of alternatives or modifications. Section 7 of the Endangered Species Act prohibits Federal agencies from authorizing, funding, or carrying out any action that may jeopardize the continued existence of listed species or destroy or modify their critical habitats.

President Carter has made the implementation of section 7 a priority and is clearly opposed to any attempts to modify or weaken its provisions. In his Environmental Message of May 23, 1977, he stated that " * * * to hasten the protection of threatened and endangered species, I am directing the Secretaries of Commerce and Interior to coordinate a government-wide effort, as required by the Endangered Species Act of 1973, to identify all habitat under Federal jurisdiction or control that is critical to the survival and recovery of these species. The purpose of this program is to avoid the possibility that such habitats will be identified too late to affect Federal project planning. Major projects now under way that are found to pose a serious threat to endangered species should be assessed on a case-by-case basis".

As a supplement to that statement, the President sent a special message to the Secretaries of Interior, Agriculture and Defense and the Chairman of the Tennessee Valley Authority directing them to identify lands under their jurisdiction which appear to be critical habitat. This information is then to be submitted to the appropriate Secretary for a determination of critical habitat if such a determination is justified. The Secretaries of Interior and Commerce were specifically directed to develop an expedient schedule for implementing this process and to provide guidance and coordination to assure compliance.

The Fish and Wildlife Service has prepared guidelines and a timetable for implementing the President's directive. This document, which was presented to appropriate land managing agencies for review in December, establishes a format for critical habitat submissions, including the description maps and justifications necessary for the area in question and identification of environmental impacts for compliance with the national Environmental Policy Act.

The timetable calls for completion of the surveys by January 1980. The plan places the highest priority on identifying the habitat of species facing the greatest threats and will require designation of critical habitat for 35 species in FY 1978 and 77 in FY 1979. To date, critical habitat determinations have been made for 22 species and proposals have been published in the Federal Register for 43 more.

The Endangered Species Act of 1973 gave the Secretary broad new authority to extend protection to a species' habitat. In doing so, it created a backlog of the species listed under the 1966 Act to be considered. The completion of critical habitat determinations for currently listed species will require additional funding and manpower resources through FY 1979. In the future, we anticipate that critical habitat data will be included at the time species are listed or proposed for listing.

The Fish and Wildlife Service and the National Marine Fisheries Service recently published the final regulations prescribing the consultation process to assist Federal agencies in complying with section 7 of the Act. This rulemaking requires Federal agencies to consult with the Service if their activities or programs may affect listed species or their habitats. After such consultation, it is the responsibility of the involved agency to decide whether or not to proceed with the proposed activity in light of its section 7 obligations.

The decision to require rather than recommend consultation was made to promote conformance with recent Federal court decisions setting forth the policy that this interchange is requisite to administration of the law by the Secretaries of Interior and Commerce. Mandatory consultation will also avoid duplication of conservation efforts among Federal agencies.

Under the new regulations when Fish and Wildlife Service officials receive a request for consultation from another Federal agency, it is required that they evaluate an activity's impact within 60 days. At that time, the Service can determine that the activity will have no impact on listed species, that it will actually benefit the species, or that it is likely to have a harmful effect. The Service can also

request that further studies be undertaken in order for it to render its final biological opinion.

The new rulemaking recognizes that general consultation procedures must be sufficiently flexible to accommodate the myriad activities that are authorized, funded, or carried out by the Federal government. Accordingly, a new section was written into the procedures providing for the drafting of joint counterpart regulations by Federal agencies, with assistance from the Service and the National Marine Fisheries Service, that are tailored to the needs of individual agencies.

In fiscal year 1977, when consultation was optional, over 4,500 were conducted by the Fish and Wildlife Service. When the full impact of this rulemaking is felt in fiscal year 1979 we expect that requests for consultations will exceed 20,000.

RECOVERY

For those species not able to recover solely from the automatic protection benefits accorded by sections 7 and 9, restoration lies in a coordinated program of habitat preservation, species management and research.

One of the most important steps after the listing process is to establish a team of experts from the Federal, State and private sectors to draft coordinated plans for restoration of endangered and threatened species and to guide their implementation. Each team develops a recovery plan designed to the specific needs of one animal or several species occupying a common ecosystem. These recovery plans identify limiting factors, propose corrective measures and recommend land acquisition, management activities and other efforts to restore the species. There are presently 59 recovery teams with the responsibility of developing recovery plans for 73 priority species. Thirteen plans have been officially approved and are in various stages of implementation, including strategies to protect the peregrine falcon, Mississippi sandhill crane, California condor and the Columbian white-tailed deer. Another 26 plans are currently being reviewed by the Service. An efficacious recovery program will require the formulation of 300 additional plans in fiscal years 1979 and 1980.

Acquisition of a relatively small area will sometimes preserve a species' entire range. Over \$26 million in Land and Water Conservation funds have been obligated for the purchase of some 59,000 acres of key habitat for endangered and threatened species since 1968. In viewing the long range requirements we estimate that as much as \$200 million may be needed to acquire habitat over the next five years.

Important species management actions are occurring on both Service and non-Service lands. Fifty-five endangered or threatened animals are found on 152 Service refuge or fish hatchery lands, where management ranges from intensive, as at the Aransas National Wildlife Refuge in Texas for the whooping crane, to incidental habitat protection, as at the Kern and Pixley National Wildlife Refuges in California for the blunt-nose leopard lizard. At Aransas, 7,000 acres of the 47,000 acre refuge are managed for the endangered whooping crane during their winter stay. Small numbers of the endangered Florida manatee are now relatively secure in nearly 2,000 acres of water habitat on the Ding Darling and Chassahowitzka Refuges in Florida. The key deer, all but exterminated in the 1940's, have been brought back from a population low of 30 to over 600 on the Key Deer National Wildlife Refuge, also in Florida.

The initial thrust of the endangered species program on refuges has been to identify vertebrate animals. It is quite probable, however, that some refuges harbor other, but as yet unspecified, endangered invertebrate species as well. We hope to list 100 or more plant species on Service lands by the end of fiscal year 1979. The Fish and Wildlife Service will have to institute conservation programs for them, such as the maintenance of an appropriate state of plant succession, fencing and fire control, not only to adequately protect listed species, but to set a high standard for other land managing agencies to follow.

The Service also provides management assistance on non-Service lands and we are proud of our accomplishments in this area. For example, action has been taken to restore a wild masked bobwhite quail population through propagation and release in southern Arizona. At least 30 bobwhites, released in 1976, survived the winter and one brood was observed in the fall of 1977. The peregrine falcon was reintroduced in the Mississippi River watershed, New Mexico and Arizona. Control of competitors of the Kirtland's warbler in Michigan resulted in a 10 percent population increase of this song bird in 1977.

There is an extensive research effort, both by the Service and by contract, aimed at, among other things, producing endangered and threatened species in captivity for release in the wild and conducting investigations to aid in species status surveys and the formulation of recovery plans. Research takes place primarily at the Patux-

ent Wildlife Research Center, Maryland, and at nine field stations. Ongoing projects include: Organized surveys of 40 endangered forest birds of Hawaii which will provide the basis for eventual recovery plans; incubation of wild Puerto Rican parrot eggs and returning the young to the wild; and transfer of fertile eggs produced by whooping cranes at the Patuxent facilities to Grays Lake National Wildlife Refuge in Idaho for an egg-fostering project.

I am sure you are aware, Mr. Chairman, the Congress having recently enacted legislation authorizing appropriations for section 6(i) of the Endangered Species Act, that the endangered species grant-in-aid program encourages State participation in species restoration efforts. The habitats of many endangered and threatened species are located on State and private lands and the States have an important role in the development and maintenance of substantive programs for their conservation. As of December 31, 1977, 21 States have entered into cooperative agreements with the Service, qualifying them for endangered species grant-in-aid funding. By fiscal year 1979, the Service anticipates that 10 additional States will have signed similar agreements with us. Public Law 95-212 authorizes \$16 million for the Departments of the Interior and Commerce for State projects to protect and restore populations of endangered or threatened species through fiscal year 1981, and contains language which will facilitate a State's qualification for financial assistance.

The Endangered Species Act directs many other activities aimed at enhancing the survival of species, including a greater international involvement. Section 8 of the act is the implementing legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora. As a party to that Convention, the United States has a major international commitment to the preservation of global fish and wildlife resources.

To date, 40 nations have ratified the Convention. The U.S. Senate approved it on January 15, 1975, and the Convention came into force July 1 of that year. Executive Order 11911, signed April 13, 1976, established the Fish and Wildlife Service as the U.S. Management Authority and created the U.S. Endangered Species Scientific Authority (ESSA), as required by the Convention. The Management Authority issues the required permits and acts as coordinator and spokesman for U.S. activities. ESSA, an autonomous committee of representatives of six Federal agencies and the Smithsonian Institution, is responsible for the biological review of applications to export or import species listed on Appendix I of the Convention, and to export species listed on Appendix II. The Management and Scientific authorities are now actively implementing the provisions of the international agreement.

The Management Authority issued regulations to implement the Convention in the United States. As the Management Authority, we also conducted an extensive public education program in order to familiarize persons and groups affected by the Convention with the new requirements. Since the regulations became effective May 23, 1977, we have completed action on 343 permit applications.

The Management Authority has also been active in working to make the Convention more effective. At a Special Working Session, held in Geneva, Switzerland, last October we proposed an internationally standardized identification manual and discussed standardized guidelines for humane transportation of Convention species. Pursuant to a recommendation adopted at the Special Working Session and in an effort to "clean up" the lists, the Service, with the help of State fish and wildlife agencies, has begun a review of all species of wildlife native to the United States that are presently listed on the appendices of the Convention. We are also seeking State recommendations on amendments to the appendices.

In addition, Section 8 authorizes the Secretary of the Interior to utilize United States excess foreign currencies for programs necessary or useful to the conservation of endangered or threatened species. The Congress has authorized use of \$600,000 in foreign currency equivalents held at embassies in Egypt, India and Pakistan. Using these monies in lieu of general revenues we are developing threatened and endangered species research programs in Egypt, including training and education in the management and protection of such species as the cheetah, leopard, dugong, Nile crocodile and slender-horned gazelle. This program will have a major salutary effect on conservation of threatened and endangered species throughout the arid ecosystem of the Middle East. Similar programs are being developed with India and Pakistan.

We have used the consultative and cooperative authorities of section 8 to develop joint research on threatened and endangered wildlife with foreign countries which share our concerns for protecting these species. For example, consultations and shared field work on endangered mammals and birds has been undertaken with the Soviet Union. With Mexico, we have established cooperative research projects on the California condor, peregrine falcon, grizzly bear and masked bobwhite quail.

Finally, section 8 calls for implementation of the 1940 Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. In meeting this responsibility, we have begun work with the Brazilians to train their professionals in bird banding techniques. In Venezuela, we are joining in the design of a program to train resource managers in fish and wildlife protection, ecosystem preservation and law enforcement.

I firmly believe that significant progress has been made in implementing this landmark legislation. With the establishment of new systems, regulations and processes, the endangered species program is being administered in a rational and effective manner. The implementation of the Endangered Species Act has the full support of this Administration, which has made it a priority environmental program.

Of course, choices have been made. Although the Act gives authority for listing and protection of species worldwide, limited resources have necessitated the establishment of priorities within the program and the limitation of some program efforts. Endangered native ecosystems and species have received priority and the more endangered a species is, the greater the effort is to provide for its conservation. While it is unlikely that we can ever provide the resources necessary to protect all species equally, an adequate level of funding and manpower must be available to operate within the priority system and at the same time, meet emergency situations and respond to an ever-increasing activity on the part of private citizens and conservation groups.

Approximately \$12.23 million and 200 man years of effort are available to the Fish and Wildlife Service in FY 1978 to administer the endangered species program, other than grant-in-aid and land acquisition. Our proposed FY 1979 authorization of appropriations would essentially extend current funding levels for most activities and allow for a \$3.9 million increase to accommodate our expanded obligations under section 7. The authorization of such funds as may be necessary in FY 1980 will provide, within national budgetary restraints, flexibility to address the complex biological challenges of the Act and the growing administrative workload associated with its implementation. The current authorization of the Endangered Species Act expires September 30, 1978. I urge your timely and positive consideration of our proposal in order that we may continue with this crucial program.

Mr. Chairman, environmental change is taking place so rapidly that further delay in protection of endangered species and their habitat pushes them inevitably closer to the brink of extinction, making recovery more difficult and costly. The Endangered Species Act safeguards endangered species and their habitats, but also defends man's interests as well. The endangerment of lower life forms is a barometer for the human race, for a planet Earth which cannot support a variety of life cannot, in the long run, support man.

Mr. GREENWALT. As you know, Mr. Chairman, section 15(1) of the 1973 act authorizes appropriations to the Department of the Interior to carry out functions and responsibilities under the act other than land acquisition and grant-in-aid to the States. Our proposed amendment would extend the authorization at an amount not to exceed \$17 million for fiscal year 1979, and authorize such sums as are necessary for fiscal year 1980.

Our suggested authorization level for section 15(1) for fiscal year 1979 is consistent with the administration's budget request of \$16.4 million. It will essentially extend current funding levels and allow for a \$3.9 million increase to accommodate the acceleration of the program to protect endangered and threatened species on Federal lands, as directed by the President.

I can report to you today that, in our judgment, the Endangered Species Act is working well. The Fish and Wildlife Service has developed a balanced program of listing, protection and recovery efforts; and significant advances have been made in enlisting international, State, and private cooperation.

Of course, limited resources have necessitated the establishment of priorities—endangered native ecosystems receive priority over foreign species, full species receive priority over subspecies, and the

more endangered a species is the greater the effort to provide for its conservation. Yet, within funding and manpower parameters the Service has remained firmly committed to the ideal, envisioned by the 93d Congress when they passed the legislation, of protecting all species of plants and animals whose continued existence is in jeopardy.

The many forms of life on this small planet represents millions of years of evolution and diversification. Different species have established intricate interdependent relationships which can be of critical importance to their survival. The act recognized, and recent experience has confirmed, that it is only through the ability to provide protection to the full spectrum of plant and animal life that we are able to afford protection to any particular species. In other words, if we are to preserve species such as the bald eagle and the grizzly bear, we must preserve the network of life upon which they depend.

The Endangered Species Act of 1973 provides protection not only for endangered species and their habitats, but for man as well. Besides adding an incalculable esthetic richness to our lives, and contributing to the Earth's ecological stability, species conservation brings innumerable practical benefits to society. The endangerment of any living thing is an environmental indicator for the human race; the harmful effects of DDT were first discovered in an endangered species. Plants and animals often contribute to great strides in medicine. A sponge, found in the Caribbean Sea, has recently been discovered to contain the first substance truly effective in combating a viral disease. Another substance, found in mollusks, appears to prevent cancer in mice, with no ill side effects. Genetic variability provides a resilience vital to modern agriculture and livestock industries. The list goes on and on, but the point is that once a species becomes extinct, its genetic composition and all of its potential values as a natural resource are lost to mankind forever.

Unfortunately, our growing appreciation for the potential value of all species has coincided with their accelerating extinction rate. Widespread disruption of habitats and overexploitation are the major causes of this problem. However, many endangerments and extinctions can be prevented by the protection of a relatively small area, or by the careful development of land and water use projects. The President has promised the American public that a reasonable effort to do exactly this will be made at the Federal level. His environmental message of May 1977, requested acceleration of the Federal program to insure species protection and to resolve any conflicts between protection and other resource uses.

Accordingly, we have embarked on a major Government-wide review and identification of critical habitat on Federal lands. Completion of this survey during fiscal year 1980 will substantially lessen the possibility of future conflicts between development projects on Federal lands and the need for habitat preservation.

The Fish and Wildlife Service, in conjunction with the National Marine Fisheries Service, recently issued final regulations prescribing the consultation process to assist Federal agencies in complying with their responsibilities under the act. This rulemaking requires Federal agencies to consult with the fish and Wildlife Service or the National Marine Fisheries Service, as appropriate, when they

propose an activity or program which may affect listed species or their habitats. In fiscal year 1977, when consultation was optional, over 4,500 were conducted by the Fish and Wildlife Service. When the full impact of this rulemaking is felt in fiscal year 1979, we expect that requests for consultations will exceed 20,000.

There are thousands of endangered and threatened animal and plant species throughout the world. While we cannot realistically expect to recover all of them, over 650 of those with the greatest need have been listed by the United States, including 162 U.S. species; we hope to provide protection to at least an additional 600 priority species by the end of fiscal year 1980. As more are listed, enforcement is amplified and permit and recovery activities are increased. An authorization of such sums as may be necessary in fiscal year 1980 will give us the flexibility to expand the endangered species program where necessary and appropriate within the constraints of the national budget.

The authorization of appropriations for section 15(1) of the Endangered Species Act expires on September 30, 1978, so I respectfully urge you to give timely consideration to the proposal presented today. We must continue efforts to regain the strength of life on this globe, for ourselves and for future generations.

I'm sure the Mr. Schreiner, who has accompanied me today and whom you know from previous appearances before this subcommittee, will be happy to join me in answering any questions that you might have.

Mr. LEGGETT. Thank you very much. That is very helpful to the subcommittee.

In the analysis I have before me you were appropriated in 1974, \$4.6 million; 1975, \$5.6 million; 1976, \$7.4; 1977, \$9.4; 1978, \$12.5, and we are requesting \$16.4 million for this program for 1979, a fourfold increase over 1974, is that correct?

Mr. GREENWALT. That is correct, sir.

Mr. LEGGETT. Now, how many plants are currently listed as endangered?

Mr. SCHREINER. Mr. Chairman, there are four plants currently listed. An additional 12 will be listed in the next 2 or 3 weeks, and about 1,700 have been proposed for listing.

Mr. LEGGETT. How many people do you have working on that full-time?

Mr. SCHREINER. Mr. Chairman, we have eight full-time professionals working on the entire worldwide plant and animal listing effort. We have only one botanist.

Mr. LEGGETT. One person?

Mr. SCHREINER. Yes, sir.

Mr. LEGGETT. He must be very good, but working very slow.

Mr. SCHREINER. Well, sir, I think that you will see the results of his work later this year. As you know, the Smithsonian Institution suggested a large number of plants for possible listing. However, each of these had to be reviewed very carefully, according to the requirements of the act. Many of them have now been reviewed, and many of the final rulemakings to list plant species will be issued later this year and next year.

Mr. LEGGETT. All right.

Do you have a 5 year program on plants, as to how many you propose at the end of the first, second, third, fourth, and fifth year?

Mr. SCHREINER. I am not certain, Mr. Chairman, that we have a 5-year plan for 5 years for plants alone. However, I will be glad to supply this data for you for the record if you desire.

Mr. LEGGETT. Well, most other agencies have 5-year plans for their activities. We had 5-year plans for building Navy ships last year, and they were all different. They varied about 100 percent from what we actually got in the budget this year.

So you recognize, if you get a 5-year plan, that does not necessarily mean that you have to do it, but it does indicate that you do have some forethought as to where you might like to be under reasonably ideal conditions. If you could provide such plans on plants and on other species, they would be helpful to the subcommittee.

Mr. SCHREINER. I will be pleased to do so, Mr. Chairman.

[The following was received for the record.]

5-year listing plan, fiscal years 1978-83

Mammals:

Currently listed	282
1978.....	60
1979.....	50
1980.....	50
1981.....	50
1982.....	50
1983.....	50
Total	592

Birds:

Currently listed	214
1978.....	1
1979.....	30
1980.....	30
1981.....	30
1982.....	30
1983.....	30
Total	365

Reptiles and amphibians:

Currently listed	76
1978.....	15
1979.....	5
1980.....	5
1981.....	5
1982.....	5
1983.....	5
Total	116

Fish:

Currently listed	50
1978.....	45
1979.....	12
1980.....	12
1981.....	11

Fish:	
1982.....	10
1983.....	10
Total	150
Insects:	
Currently listed.....	8
1978.....	25
1979.....	30
1980.....	40
1981.....	50
1982.....	50
1983.....	50
Total	253
Other invertebrates:	
Currently listed.....	26
1978.....	120
1979.....	116
1980.....	116
1981.....	116
1982.....	116
1983.....	116
Total	726
Plants:	
Currently listed.....	4
1978.....	35
1979.....	160
1980.....	350
1981.....	390
1982.....	390
1983.....	871
Total	2,200
Total:	
Currently listed.....	660
1978.....	301
1979.....	493
1980.....	603
1981.....	652
1982.....	651
1983.....	1,132
Total	4,402

Mr. LEGGETT. I do not say that by way of criticism at all. Certainly it is very easy to say that you have 1,800 plants applied for, and you are not acting. I do not know whether you have good reasons to act or not. Undoubtedly you have the shorts as far as personnel goes.

Undoubtedly we could accelerate this program, and devote \$50 million to it. However, this is a difficult area, where it is difficult to get money.

Now, as far as the program to enhance the consultation under section 7, I talked in my opening statement about the 20 teams that I understand you folks have developed. I would guess those teams are made up of four or five people each.

Mr. SCHREINER. Yes, each team will be composed of four people, Mr. Chairman.

Mr. LEGGETT. Are those teams all new teams?

Mr. SCHREINER. They will all be new teams, yes, sir.

Mr. LEGGETT. Will they relate to areas of the country, or relate to areas of specialty?

Mr. SCHREINER. They will work out of our regional offices. There will be three four-man teams in four regions where we anticipate the heaviest workload. There will be two four-man teams assigned to two regions and the Alaska area office. One four-man team will be stationed in Washington.

Mr. LEGGETT. I presume that these teams are created in response to the Federal court's interpretation in the *Tellico* case, indicating that the Federal Government should exercise maximum effort to avoid encroachment on endangered species and habitat.

Mr. GREENWALT. At least in part, Mr. Chairman.

Mr. LEGGETT. Now, we have asked you in the past how many other situations we have in the country which might smack of *Tellico*-type confrontation. I believe that the numbers that you have reported in the past to this subcommittee have been a dozen.

So the question is, as you proceed with these 20 teams to review projects by all Federal agencies involved in some 20,000 consultations, which involves 1,000 consultations per team, which I suspect involves three or four consultations per day, are you going to be able to keep up with demands on your service to accomplish the desired consultations and accomplish the ends prescribed by the legislation before us, and likewise not create an unreasonable backlash in other departments of Government?

Mr. GREENWALT. Well, we earnestly desire to do both things, Mr. Chairman. We certainly do not want to create a backlog for other departments.

However your question is very difficult to answer. As I am sure you know many consultations are very simple ones and involve only a telephone call, of which several can be handled in a given day. But there is the possibility of having a number of major issues develop simultaneously. In this case we would have to consider assigning personnel who might otherwise be doing something else, to help deal with these consultations.

We believe, based on experiences in the past, that the team approach which we have outlined will probably work. I cannot guarantee that it will, for the simple reason that we have no way of predicting what kinds of situations will develop that may require a very detailed and elaborate consultation. Some may take several weeks, and obviously, if we have many of those, we will be in trouble.

Mr. LEGGETT. All right.

Now, as I understand it, we are talking about fiscal year 1979, is that correct?

Mr. GREENWALT. That is correct, sir.

Mr. LEGGETT. Are we going to be able to accomplish the work of your Department, the Congress, and the agencies between now and October 1, without this consultation mechanism?

Mr. GREENWALT. The teams are not now on board but will be created as quickly as we can assemble them.

The consultation process that may be encountered yet in fiscal year 1978 will depend upon the reaction of Federal agencies to the recently published section 7 regulations, and I anticipate that the increase in the number of requests for consultations will most likely peak early in 1979.

Unless there is a very serious and sudden increase in the number of major consultations, I believe that we can handle what will develop between now and when the funding becomes available in fiscal year 1979. If that occurs, I will have no other recourse than to divert other employees to assist with the consultations.

It is very important that we do not cause a backlash or a bottleneck which will unduly delay Federal projects. I think the future of the Endangered Species Act and the importance of its mission, makes it imperative that we do not permit these problems to develop.

Mr. LEGGETT. Very good.

To make sure that we are all working together, what I would ask you to do is report to this subcommittee every month on your activities in this regard.

Mr. GREENWALT. Absolutely, sir. I will be more than happy to supply the Committee with a monthly report on consultations which have taken place, and share any problems which might have been encountered with you or anyone else who might be interested.

Mr. LEGGETT. I am sure you would.

Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman, and welcome, Lynn—

Mr. Schreiner.

I am a little bit concerned about your fear of backlash. I am not sure that you are not in the business of creating some backlash. It may be a part of the mission that you have, not to steer too far away from a question just because it does create confrontation and backlash.

Do you understand my concern here?

Mr. GREENWALT. I am not absolutely certain, Mr. Forsythe, that I do understand—

Mr. Forsythe. It may be that I do not understand your reference and your use of the term "backlash."

Mr. GREENWALT. Let me explain my concern.

In order to properly discharge our responsibilities under the Endangered Species Act it is my belief that the Service must give prompt and careful assistance to other Federal agencies in determining the impact of their activities on the continued well-being of a listed species. We do this through the consultation process.

If the agency is about to undertake something that will jeopardize the existence of an endangered or threatened species, we have an obligation to tell them so. Conversely, if there is no problem, they should be promptly informed.

I want to avoid the confrontations which might develop because we did not point out modifications or alternatives to eliminate a detrimental effect, or worse yet, because we were in slow responding.

The Endangered Species Act is done a great disservice when confrontations result from some failure in the consultation process.

Mr. FORSYTHE. In that context, I do appreciate the concern. But I think it is unfortunate to use the term "backlash," because it needs that rather broad explanation.

With the backlog situation, which the Chairman has referred to, how are we going to catch up? Where are we in terms of protecting those species, either plant or animal, that have not been evaluated under the study process? In other words, how are we going to prevent the Tellico Dam situation, where the trouble arose because a species was listed only after a project was almost complete?

Will we continue to face having to deal with situation which seem to be in hand and then all of a sudden find that an action has created a very serious problem with regard to a newly discovered species?

Mr. GREENWALT. Tellico is one of those unfortunate anomalies where the species was not discovered or listed until construction of a major project had already commenced. I think this kind of confrontation will be rare.

I think the kind of problem that we should be alert to at present is in connection with projects that are permitted to proceed to an advanced stage of planning before the agency is alerted to the fact that an endangered or threatened species may be involved.

Mr. FORSYTHE. Well, I want to expand on that just a little further. In that process, will you be looking at these very species that at this point have not been listed but which are still in the process?

Mr. GREENWALT. Oh, yes. In the consultation process, we ordinarily indicate not only which listed species may be affected by a project, but also those species which are under consideration and which might be listed. We do not want to "sandbag" an agency late in the game with a species that nobody had mentioned in earlier discussions.

Mr. FORSYTHE. I think that is very true, but it seems also very important, as you have said, to try to anticipate future problems and then be able to warn those in charge of project planning to look out for them, there may be problems that are coming up.

Mr. GREENWALT. It is very important and it is our intention never to leave any doubt with the consulting agency as to what may be down the pike. This will become especially important as plants begin to be listed because of their sheer numbers and distribution patterns.

Mr. FORSYTHE. Yes, 1,700 with barely a real start —

Mr. GREENWALT. That is right. That is why Mr. Schreiner spoke of the plant-listing effort as a slow painstaking process. One of the things we are trying to do is identify the location of these plants so that we can alert an agency, with accuracy, to the presence of endangered or threatened flora as well as fauna.

Quite frankly, I think that the credibility of the Endangered Species and the public reception it receives is going to depend on our accuracy, our timeliness, and our full cooperation with interested and affected parties. That is what the Fish and Wildlife Service intends to provide, at whatever cost.

Mr. FORSYTHE. I have to get parochial. We have, in New Jersey, a tree frog which is being studied. Where does that study stand? Do you have any information on that?

I understand you already have one tree frog listed down South, but you have not reached a decision on our own animal.

Mr. SCHREINER. Mr. Forsythe, I am not totally familiar with this toad, I am sorry to say. I do not believe, however, that we have proposed it for listing as of this time.

Mr. FORSYTHE. I understand the Audubon Society of New Jersey has forwarded the information to you. I had hoped it was there.

Mr. GREENWALT. I believe that a graduate student in New Jersey is working on a report which will help us to make a determination.

Mr. FORSYTHE. Well, you have two members of this committee, both Mr. Hughes, who is not here, and I, who feel that this is a very important issue in our State.

Mr. GREENWALT. Yes, they tend to be. There are other members of the committee present who can attest to the liveliness of some of these issues.

Mr. LEGGETT. We will get special reports on all your down home species.

Mr. FORSYTHE. Thank you, Mr. Chairman.

Mr. LEGGETT. Mr. AuCoin?

Mr. AU COIN. No questions.

Mr. LEGGETT. Mr. Bonior?

Mr. BONIOR. Mr. Greenwalt, could you describe for me the cooperation that you have, and the agency has with the community in helping to alleviate the backlog that you alluded to?

Mr. GREENWALT. Our relationship with the academic community is one greater than to alleviate the backlog.

As you know, the act requires that we shall use the best scientific and commercial information available to make determinations regarding listing or critical habitat.

In developing this kind of data we very frequently tap the academic community, either by virtue of their interest and voluntary participation, or sometimes through a contractual arrangement for the development of specific information. The academic community is frequently represented on the recovery teams established to develop long range plans for the restoration of a species.

As you know, the act allows interested parties to petition the secretary of the Interior to undertake a review of a specific species. Many of these are developed by the academic community and often provide us with a substantial data base on the status of the species.

The academic community is deeply involved in the endangered species program, and I daresay we could not succeed without them.

Mr. BONIOR. What percent of your appropriations are used for contracting out, to either the academic community, or the business community, roughly?

Mr. SCHREINER. I cannot calculate the percentage off the top of my head, but we are currently spending about \$200,000 in contracts with the academic community for survey work and other specialized research.

Mr. BONIOR. That is the last fiscal year, this fiscal year?

Mr. SCHREINER. That is the current fiscal year, sir. As you know, we have a rather large research organization in-house, within the Fish and Wildlife Service, so our total research budget is somewhere in the neighborhood of \$1 million.

Mr. GREENWALT. I think I should add, Mr. Bonior, that much of the contribution by the academic community, as well as others is done at no charge. Participation on recovery teams, for example, is done without salary compensation. Petitioning work is almost always, insofar as I know, voluntary. A lot of very important information is provided us at no charge, voluntarily.

Mr. BONIOR. What is the status of the African elephant issue? We had a hearing on that issue a couple of months ago, I believe, and where are we with that?

Mr. SCHREINER. Sir, we published in the Federal Register of January 16, 1978, a proposed rulemaking that would list the African elephant as a threatened species. That proposal contained four alternatives for regulating the trade in elephant products. The public comment period ends March 20, 1978, at which time we will assemble and evaluate all comments, as required by the law, and then issue a final rulemaking. I would suggest that we are probably within 60 days of a final decision.

Mr. BONIOR. I have no further questions.

Thank you.

Mr. LEGGETT. Before Mr. Oberstar questions you, I just want to point out some facets of the budget which maybe the other Members might want to comment on.

We have escalated your budget from \$12.5 million this year to \$16.4 million approved by OMB for next year. In that \$16.4 million you want to escalate the number of people for planning coordination from 83 to 124, and you got 83 people. You wanted to escalate your people from 23 to 44 for species and habitat management and you got 26; Species and habitat management on non-Service lands from 10 to 15, and you got 10; Law enforcement, 74 to 94, and you got 74; and research from 24 to 33, and you got 24. Total, 217. You thought you needed 310 to do the job, and you got 217.

Now, they have lumped in \$3.8 million of additional dough for you, and it is my understanding that you plan to acquire some part-time help to in some way magically perform the work of the roughly 90 people that you are not getting. How do you do this without creating problems with the environmental community and this subcommittee?

Mr. GREENWALT. Let me back up just a second, Mr. Chairman, to clarify the fact that the President's budget request for fiscal year 1979 does not contain any increase in personnel ceilings.

Mr. LEGGETT. There were none. So 217 people is what you have in the program?

Mr. GREENWALT. That is correct, sir.

Mr. LEGGETT. And you asked for 310, not additional, but a total?

Mr. GREENWALT. That is right, Mr. Chairman.

Mr. LEGGETT. The difference there is 93 people that you did not get. So instead of 93 people, you got \$3.87 million. Mr. Oberstar would like to know how all this works out.

Mr. GREENWALT. The problem confronting us is how to carry out the mandates of the Endangered Species Act and the President's directive I referred to in my opening remarks to resorce limitations. Our only option is to use less than full time employees, aided and trained by permanent full-time people. As you know, part-time positions do not count against permanent full-time ceilings.

Mr. LEGGETT. These are temporary, full-time people?

Mr. GREENWALT. These are less than full-time people—part-time employees.

Mr. LEGGETT. Is that less than full-time people doing consultation?

Mr. GREENWALT. That is right.

Mr. LEGGETT. Many times that telephone is going to ring, and there is not going to be anybody at that desk.

Mr. GREENWALT. Not necessarily, Mr. Chairman. Less than full time, could be less than full time to the degree of 1 hour per week, or 1 hour per day. A part-time employee could conceivably work 39 hours a week.

Mr. LEGGETT. Or he could only be working 1 hour a week.

Mr. GREENWALT. Yes, Mr. Chairman, or he could only be working 1 hour a week. But when the funding is there and the permanent ceilings are not, you make do in the best way that you can, and in our circumstances we will use less than full-time employees. They may be permanent employees, Mr. Chairman, but less than full time, and curiously enough this does not count against personnel ceilings.

Mr. LEGGETT. I do not know whether Mr. Oberstar is satisfied with that answer, but he may have some more questions.

Mr. OBERSTAR. The chairman is very good at asking the questions of interest to the other members of the committee.

I am curious why, when we have \$25 million authorization for fiscal year 1977 and 1978, we are now talking about a budget request of only \$16.4 million.

Mr. GREENWALT. This request is consonant with the President's proposed fiscal year 1979 budget.

Mr. OBERSTAR. That is the formal reason.

Mr. GREENWALT. That is correct. As you know, Mr. Oberstar, there is always a meshing of the gears, as it were, to make a budget request coincide with the President's budget.

Mr. OBERSTAR. How does this budget rank among all the budgets of the Department, midway, in the lower one-third, lower one-fourth?

Mr. GREENWALT. Not possessing intimate knowledge of all of the budget packages of the Department, I would guess that it is probably about midway.

Mr. OBERSTAR. It seems, with the enormous job to be done, the requirements, the increasing number of species to be added, and your own projections for acquisition of habitat to protect endangered species of \$200 million for acquisition of habitat over the next 2 years, that this is a grossly inadequate budget.

First, I should clarify that \$200 million is our projected need for land acquisition over the next 5 years and that land acquisition is not included in the section 15 authorization, and therefore, it is not included in our \$16.4 million budget request. Money to purchase land for the protection of listed species and their critical habitats is derived from the Land and Water Conservation Fund.

Mr. GREENWALT. I would also like to add that Secretary Andrus has been very supportive of the endangered species program. While it has troubled him on occasion, because there is the possibility, indeed the historical tradition, of some confrontation in his own

Department, by virtue of the nature of the Department of the Interior, the Secretary has been supportive and has accorded the program high priority.

Mr. OBERSTAR. With a staff and funding inadequate to the job, whether by design or by accident, that is the fact. Your Agency is able to concentrate only on the most obvious and pressing problems.

Mr. GREENWALT. That becomes the case, obviously, sir.

Mr. OBERSTAR. And if this committee were to authorize substantially more money, or provide an authorization that we think would be adequate to do the job, what is likely to happen, assuming that we get the appropriations?

Mr. GREENWALT. If the funds were appropriated, we would utilize them.

Mr. OBERSTAR. The OMB would not impound that money?

Mr. GREENWALT. I cannot speak for OMB. I have never been confronted with this possibility with OMB, so I do not know how they would come down on the endangered species program.

Mr. OBERSTAR. The program suffers criticism when major water resource projects are delayed because of some action involving an endangered species. If you had adequate funds, a full program, and enough people to do the work well in advance, and to plan far enough down the pike and set aside habitat, these problems could be resolved before they become problems, before they become public controversies.

Mr. GREENWALT. I certainly agree with that. This is the basis for our planning, and the basis for our requests in the budget process. We share your feeling in this connection, Mr. Oberstar.

Mr. OBERSTAR. I read with interest your report on the effort made in recovery, and I noted projection of some \$200 million for acquisition.

Now, is that to come entirely out of the Land and Water Conservation Fund?

Mr. GREENWALT. Yes.

Mr. OBERSTAR. Do you think that is an adequate way of providing for habitat acquisition? Would it be better if you had a fund available to the Service itself for this program?

Mr. GREENWALT. I am not sure a separate fund would prove any more effective, Mr. Oberstar. The Land and Water Conservation Fund has been recognized as a legitimate source of funding for this program, and the record shows that we have had a significant opportunity to use the fund to acquire habitat for endangered species.

Mr. OBERSTAR. As it is a reliable source, you do not have to rely on the vicissitudes of Congress?

Mr. GREENWALT. Not entirely, sir. And we have made a good case for our need to acquire land to protect listed species, so our share of the fund has increased substantially in the last several years.

Mr. OBERSTAR. When you have had problems, or a need to acquire land, on say an emergency basis, have you had difficulty in obtaining funds?

Mr. GREENWALT. We have never had any problem at all.

The Bureau of Outdoor Recreation, now known as the Heritage Conservation and Recreation Service has been very cooperative, so that we could take advantage of the fund when it has been necessary.

Mr. OBERSTAR. I would not go any further into the next question than simply to ask you: When do your regulations become final on the threatened status for the wolf?

Mr. GREENWALT. Mr. Schreiner tells me 2 to 3 weeks. I think what remains, Mr. Oberstar, is to explain one more time to the Secretary precisely what it is we are about to do. He has expressed a very keen interest in matters of this nature, and he has asked to be briefed very carefully.

I would like to reiterate that Secretary Andrus has been very supportive of the endangered species program. The only time he has expressed concern about listing a species was when we wanted to list a rattlesnake. But after I explained to him what was at stake, he swallowed his antipathy toward snakes and gave the go ahead.

We now have a date to tell him all about wolves in Minnesota.

Mr. OBERSTAR. Maybe you would like to come up and tell my constituents all about wolves in Minnesota when you get through with your meeting with the Secretary.

I must say that is a very unpopular proposal right now in my District.

Mr. GREENWALT. I would be delighted to come up to Capitol Hill and tell you and your staff folks about it. I am not sure I would like to go to Duluth.

Mr. OBERSTAR. Duluth would be safe. International Falls would be something else. Thank you.

Mr. LEGGETT. Mr. Dornan?

Mr. DORNAN. No questions.

Mr. LEGGETT. How can it be that this Government can be short of funds to build B-1 bombers, short of funds for ships, and short of funds for the Endangered Species Act? Who is getting the dough?

Mr. GREENWALT. I dare not answer that, Mr. Chairman.

Mr. LEGGETT. Obviously, we just have to print some more money. Very good.

Very nice to have you here, Gentlemen. That was very helpful. Now, we will go to the other Administration witnesses.

Mr. Jack Gehringer, Deputy Director, National Marine Fisheries Service.

STATEMENT OF JACK GEHRINGER, DEPUTY DIRECTOR, NATIONAL MARINE FISHERIES SERVICE, DEPARTMENT OF COMMERCE; ACCOMPANIED BY ROBERT GORRELL, ENDANGERED SPECIES PROGRAM, NMFS; AND MR. JAMES DREWRY, OFFICE OF GENERAL COUNSEL, NOAA

Mr. GEHRINGER. Mr. Chairman, my name is Jack Gehringer—

Mr. LEGGETT. Very nice to have you here, Mr. Gehringer. Your statement will appear in the record as if you read it. You may highlight it as you care to.

Mr. GEHRINGER. First, I would like to introduce two members of the staff who are with me—Mr. Robert Gorrell, Endangered Spe-

cies Program Manager, on my right; and Mr. James Drewry, Office of the General Counsel of NOAA, on my left.

It is a pleasure to appear before this subcommittee to discuss the administration's proposal to extend the authorization for appropriations to carry out the Endangered Species Act of the 1973.

Effective implementation of the act is vitally important to those species of fish, wildlife, and plants that are either endangered or threatened with extinction.

General authorization of appropriations under the Endangered Species Act for the Departments of Commerce and the Interior to carry out functions and responsibilities, other than financial assistance to the States under section 6, is provided for by section 15 of the act. The authorization for general appropriations is scheduled to expire on September 30, 1978. An extension of authorization for general appropriations is crucial for the Federal Government's endangered and threatened species conservation program to continue.

The Department of Commerce recommends extension of section 15 appropriations authorization to this agency in the amount of \$2.226 million for fiscal year 1979, and such sums as may be necessary for fiscal year 1980. The fiscal year 1979 amount represents our budget request submitted to Congress.

The National Marine Fisheries Service (NMFS) is responsible for developing and maintaining conservation programs for fish, wildlife, and plant species of the marine environment. Various species of whales, seals, sea turtles, and sturgeon are presently in danger of extinction. Restoration of these species as well as any additional marine species which may be listed in the future, through conservation management practices, is an important objective and impacts future marine resource management decisions.

Species restoration to viable population levels can be achieved through effective conservation management, based on sound population research and implemented on State, national, and international levels.

The fiscal year 1979 budget submitted to Congress for this Department shows an increase of \$680,000 over the fiscal year 1979 adjusted base of \$1.583 million for endangered species conservation. The base programs for fiscal year 1979 and the increase for fiscal year 1979 are summarized as follows:

Endangered species program administration, \$100,000. The program is centrally managed and coordinated in NMFS headquarters here in Washington, D.C. Basic administrative functions of the program include policy development, program review and coordination, development of regulations, and review of other Federal agency actions. In addition to salaries, costs include travel, public hearings, printing, and occasionally contract support. Of the four positions authorized, only two positions are currently filled—an endangered species specialist and a clerk-typist.

Endangered species enforcement, \$159,700. Enforcement activities include investigation and control of illegal taking, including killing, capturing, and harassing protected species, as well as control over importing and exporting activities. Illegal shipments of parts and products of endangered and threatened species resulting in seizures, forfeitures, and fines have been the primary enforce-

ment focus in recent years. Increasing the public awareness of Federal controls has also been emphasized.

Endangered species research. This fiscal year, 1978, the program contains \$1.2 million which includes \$263,000 in requested reprogrammed funds for sea turtles. It also includes the \$500,000 made available in fiscal year 1978 for east coast whale research, which has been temporarily diverted for work on bowhead whales. The base program covers research on endangered and threatened sea turtles, endangered seals and endangered whales, and the shortnose sturgeon recovery team. Most sea turtle research is directed at developing a sea turtle conservation shrimp trawl to reduce incidental catch by shrimpers. Other research is conducted on population dynamics and habitat characteristics. Limited research is also conducted on turtle product trade and predator control. For fiscal year 1979 we are requesting an increase of \$380,000 for research and development. The fiscal year 1979 increases will be used to implement fully the gear research program on sea turtles and conduct expanded sea turtle biological research consisting of stock assessments, mechanical tagging studies for migration and population estimates, and coordination with local conservationists on nest relocation programs.

Studies on endangered seals center on determining the current population size and trends of the Hawaiian monk seal and Guadalupe fur seal. The work includes censusing, behavioral studies, and investigation into factors acting to limit recovery of the population. It also involves limited work on the life history and population dynamics of the northern elephant seal.

Much of the research related to endangered or threatened cetaceans is funded under the Marine Mammal Protection Act. Included in this research are whale stock assessments, intensified studies on gray and humpback whales, whaling observer studies, and studies included in programs recommended by the International Whaling Commission (IWC) for the international decade of cetacean research. Whale stock assessment data on harvests, biology (age, growth, and reproduction history), and tagging enable determination of the current status of exploited stocks throughout the world. The gray and humpback whale project provides estimates of present size and distribution of stocks, migration routes, their recovery from past exploitation, and possible future vulnerability to increasing human use of marine ecosystems. The IWC whale observer program monitors compliance of Japanese land-based whalers to IWC regulations.

The bowhead whale program includes determination of current population size, trends, and status. The program will monitor the native harvest to acquire biological data on landed whales, conduct coordinated vessel and aerial surveys for distribution and migration patterns, and establish counting stations along the ice leads through which the bowheads migrate. Analysis of historical commercial whaling vessel logbooks will be completed to determine population size prior to commercial exploitation.

Our agency has established a recovery team for the endangered shortnose sturgeon. NMFS chairs the team which consists of non-Government sturgeon researchers. The team members exchange data, review technical reports, identify research and management

needs to restore shortnose sturgeon, and contract sturgeon research.

Overhead support. The fiscal year 1979 base program includes one position and \$371,100 for overhead support for all of the above activities.

In summary, our program functions are most often directly related to the animals listed on the U.S. Endangered and Threatened Wildlife List, those listed on the Endangered Species Convention Appendixes, and those under consideration for possible addition to the U.S. and Convention Lists. Extension of appropriation authorizations to the Department of Commerce is necessary if we are to carry out the intent of Congress.

Mr. Chairman, I will be please to answer any questions you may have.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

Thank you very much, Jack. The final statement on the authorization is very much needed before any determination can be made by this committee, I think. I would like to get some more information, if you have it, with regard to your total authorization as we seem to be a little bit short on background numbers here.

Your total request in the budget request is \$2.26 million, is that correct?

Mr. GEHRINGER. Yes, sir, that is correct.

Mr. FORSYTHE. What was that same request by Commerce to OMB? In other words, where did we start from on this one?

Mr. GEHRINGER. For the total program, if we include what we propose to reprogram, \$263,000, we are talking about roughly a base of 12 positions and \$1,846,000. We requested roughly, within NMFS, an addition of seven positions and \$1.2 million.

Mr. FORSYTHE. That was the increase that you requested?

Mr. GEHRINGER. That was the increase, correct.

Mr. FORSYTHE. \$1.2?

Mr. GEHRINGER. \$1.2 million.

Mr. FORSYTHE. Over and above?

Mr. GEHRINGER. The \$1.846 million.

Mr. FORSYTHE. So, therefore, your total request was \$3.05—\$3.05 million was your request?

Mr. GEHRINGER. Excuse me, our total request for 1979 was a \$1.2 million increase.

Mr. FORSYTHE. Increase over a base of 1.8?

Mr. GEHRINGER. Over a base of \$1.8 million. That makes it \$3 million.

Mr. FORSYTHE. Three million plus as a total?

Mr. GEHRINGER. Yes.

Mr. FORSYTHE. You got the 2.2?

Mr. GEHRINGER. OMB approved a \$2.2 million request—yes, sir.

Mr. FORSYTHE. That is the number that I was seeking.

In your dealing with marine species not yet listed, is there a backlog as in Interior—their problem is far greater, I know, in terms of unlisted species, particularly when you get to plants. But what is your backlog of species to be studied for listing?

Mr. GEHRINGER. At the present time there are 14 marine species on the endangered list. We are presently proposing, with Interior,

three additional sea turtles, the loggerhead, green, and the Pacific Ridley. We expect this to be completed in March.

We also have in final process, and expect to be completed in March, the listing as endangered of a sea trout in the Gulf of California, and the Caribbean monk seal.

Presently, we have nominations or interest expressed on the part of several people for American eels. This is particularly true of the small larvae that have been captured and sent overseas for artificial rearing. We also have petitions to list pillar corals in the Florida Keys and several races of Chinook salmon. These are the only applications and interest expressed in formal nominations. So we do not have the backlog and the kind of activity in that area that the Fish and Wildlife Service is confronted with.

We have no endangered marine plants listed, and none have been nominated.

Mr. FORSYTHE. That is a far more comfortable position to be in than Interior.

Mr. GEHRINGER. In that respect, yes, sir.

Mr. FORSYTHE. Well, again, as I think you well know, we are interested in seeing the efficient operation of this act.

Thank you, Mr. Chairman.

Mr. LEGGETT. Thank you.

Mr. Bonior?

Mr. BONIOR. No questions.

Mr. LEGGETT. Mr. Oberstar?

Mr. OBERSTAR. No questions, Mr. Chairman. But it was a very straightforward statement and presentation.

Mr. LEGGETT. Mr. Dornan?

Mr. DORNAN. Excellent presentation. No questions.

Mr. LEGGETT. Do I understand that you received no applications for endangerment of sea plants?

Mr. GEHRINGER. That is correct.

Mr. LEGGETT. And none have been registered?

Mr. GEHRINGER. There are no truly marine sea plants on the list, correct.

Mr. LEGGETT. How many sea animals do we have pending?

Mr. GEHRINGER. The only ones we have pending are one fish, Caribbean monk seal, and three turtles, which are in process, and will be processed very shortly.

Mr. LEGGETT. That is amazing. Do they not import many various and sundry kinds of saltwater tropical fish, which may or many not be in limited quantity?

Mr. GEHRINGER. That may be true. We do not have information at the present time which would lead us to make a nomination of a particular species.

Mr. LEGGETT. There are no applications?

Mr. GEHRINGER. That is correct.

Mr. LEGGETT. It appears that with this massive backlog of activity in the Fish and Wildlife Service they have asked for an increase of about \$12 million and 93 positions. They got a third of the money they asked for, and they got none of the people that they asked for.

You asked for an increase of seven people, and \$1.2 million. You have no backlog, and you get half your people and half your dough. I just make that as an observation.

Mr. GEHRINGER. I would think it is a good observation.

Mr. LEGGETT. Thank you very much.

Our next witness will be Tom Garrett.

Tom is not here? Tom's statement will be incorporated in our record.

[The following was received for the record:]

TESTIMONY OF TOM GARRETT, DEFENDERS OF WILDLIFE

Mr. Chairman, I am Tom Garrett, Legislative Coordinator for Defenders of Wildlife. Defenders is a national organization committed to the protection of wildlife and wildlife habitat, with headquarters at 1244 Nineteenth Street, N.W., Washington, D.C. We are appreciative of this opportunity to testify.

It has been twelve years since Congress passed the Endangered Species Act of 1966. Since that time the legislation has been twice strengthened by this Committee. The Endangered Species Act of 1972 is one of the finest pieces of wildlife legislation ever implemented. The Endangered Species Convention negotiated under mandate of the 1969 Act was a diplomatic triumph for the United States, with a prodigious potential for arresting the destruction of wild species of animals and plants.

This same period has nonetheless been beyond doubt the most disastrous decade for wildlife in the known history of the planet. Vast tracts of forest throughout the tropics, both lowland and mountain, with diverse populations of wildlife only a few years ago, have been utterly destroyed and the pace of destruction is intensifying. Additional hundreds of millions of acres have been reduced to desert by overgrazing. In the industrial nations, forest, mixed farmland, marsh and swamp are lost annually to development. The fate of the northlands, and even of Antarctica hangs in the balance.

Direct pressure on wildlife has almost everywhere mounted. Poaching in Africa has reached the level of organized extermination. The situation is only a little better in Asia and in Latin America. Species which seemed reasonably secure only a few years ago, such as Grevy's zebra, are facing imminent extinction, or may be already gone. God only knows, for example, if the sable antelope has survived the Angolan Civil War.

Yet even today the destruction and endangerment of wild species is being powerfully abetted by American industry: by the fur industry and other importers and consumers of wildlife products, by huge U.S. timber companies involved in raping the Indonesian Islands, by exporters of virulent pesticides banned for use in the United States. Over the years, the American foreign aid establishment and the World Bank and Export-Import Bank have subsidized this destruction. The Sahel disaster was virtually an artifact of ill conceived aid and development. For example, AID now proposes to finance two huge projects in Sri Lanka abutting national parks, and certain to have a terrible effect on the status of the Asiatic elephant and other endangered animals.

Even in this country, even since the implementation of the 1973 Act, a number of species such as the Red wolf have slipped closer to the final veil of biological extinction.

Some of this is not within our collective power to alter. But much of it is. The reason why we are not doing what we could do, or even a small part of what we could do, is to be found in the proposed budget before you. This annual budget would run our military establishment for an hour or two. It would have the Viet Nam war going for perhaps a day. It would last the Pork Barrel Agencies in their war against the American landscape only a little longer. It is a fraction of the federal subsidy to tobacco growers. It is less than a medium sized city spends on solid waste removal.

This budget, I submit is a function of grotesquely distorted priorities, priorities carried forward unchanged from the previous Administration, despite rhetoric. How long will the animals about which every child reads, rhinoceros, tiger, even elephants, exist in this planet as it really is?

The Interior Department's Office of Endangered Species is, in my experience, one of the best and most functional units in that Department. The biological support team is particularly dedicated and energetic. What our endangered species program now needs to begin doing the job the public expects of it is more money, and more personnel, and freedom from the Fish and Wildlife Service hierarchy.

Mr. Schreiner testified before the Public Works Committee in the Senate that he had requested fifty additional personnel for the endangered species program, none of which were allowed by OMB. This request, to us, seems eminently reasonable, and even conservative.

Given the rapidly deteriorating status of many animals and plants abroad, and the very limited and scattered data available on many foreign and even domestic species, the biological support staff needs to be enlarged.

It is clear, given the enormous backlog of consultations required under Section 7, and the staggering amount of investigation needed to determine "critical habitat" that the program support staff must be enlarged considerably.

One major weakness of the endangered species program, the failure to develop and implement adequate recovery programs, could perhaps be better met by contracting work to known experts on a particular species than by mounting "recovery teams." The record of these teams, with a few bright exceptions, is dismal. In either case, the timely development of action programs to save species—not on flow charts—but where they live and persist, requires far more money and far more emphasis.

While it is gratifying to find over 13,000 acres secured last year for endangered species with Land and Water Conservation Fund monies, this is a fraction of the need, both here and abroad. For example, the survival of most of the Madagascar lemurs depends on the protection of enough forest for them to hang on within the next one to ten years, depending on the species. Like so much else, it is very soon or never.

Enforcement remains a critical problem. It is a striking fact that during a time when wildlife numbers are plummeting world wide, the importation of wildlife products into this country, and the use of domestic wildlife products, is increasing dramatically. Imports of items manufactured from wildlife increased from 1.7 million in 1972 to 91 million in 1976. Imports of skins and hides rose from 910,000 in 1973 to 32.5 million. Game trophy imports rose from 2,800 in 1973 to 34,000. In these same years the status of crocodilians throughout the world, of turtles throughout the world became desperate.

Just as the amounts imported have soared, the prices commanded by many such products have mounted astronomically. The Committee heard testimony recently that the price of ivory has risen ten fold or more since 1970 to \$30.00 or more a kilo. Prices paid for Grevy zebra hides have increased from \$150.00 a few years ago to \$2,000.00 today in New York. This zebra is, accordingly facing extinction, along with Hartman's Mountain and Cape Mountain zebras.

The appetite of the fur industry, and of the public it supplies has never been more insatiable. Even the common bobcat is threatened in this country by the demand for its skins. The fur industry has never been more profitable. It has never been bolder, or more politically virulent. The same may be said for the trophy hunting lobby which has railed vehemently recently the listing the elephant.

We submit that enforcement effort must rise commensurately to the traffic it is supposed to regulate. We also submit that if enforcement is to succeed, and if actions are to prevent extirpation of species, rather than to simply react too late as is probably the case with the zebras mentioned, we must ban the importation of entire classes of products: all ivory, all zebra, all crocodilians, all turtles. It is very probable that we should reverse the burden of proof and allow the importation of wildlife products only in those cases where it can be shown that such importation will not adversely affect the species.

We strongly urge the Committee to add no fewer than 50 jobs to the authorization bill, specifically written in order to thwart the OMB.

Though I recognize that the Chairman has wisely and purposefully exempted discussion of Section 7 from this hearing, I would like to comment on an aspect of the protection of obscure species, such as darters, chubs and isopods which have been widely ignored. That is this: species do not exist in isolation. These obscure species, in particular, are part and parcel of very specific environments. Their disappearance, almost invariably, signals the disappearance of the habitat in which they lived in whatever region, or whatever river system comprised their range. Their disappearance signals the end, perhaps of free flowing, unpolluted water on a river, the end of inland marshes in a region. The end of the snail darter would mean the end of any large, free flowing stretch of river in the region, the end of any association that humans might have with such free flowing rivers, the end of a running water fishery, the end of 17,000 acres of productive bottom farmland, the end of the bond that humans had with that land, before it was wrenched forcibly from them, the severance of ties of the Cherokee people with ancestral sites. There

would be far, far more that is irreplaceable and unique ending forever, foreclosed forever, than the little snail darter.

This same pattern will emerge in almost all controversies pitting development versus endangered species. The species are one small part of a complex, and in some way a unique system. Section 7 acts, albeit sporadically, as an enforcer of biotic diversity. The social value of preserving biotic diversity, of retaining certain natural islands in areas where the living landscape has been largely developed and destroyed, should be obvious enough.

I think that the conservation and humane movements, across their entire spectrum, are for once united on an issue, and determined to fight as hard, and as long, and as vindictively as may be necessary to defend Section 7.

Finally, Mr. Chairman, I would like to make a few closing comments of things which can be done, if this great Act is opened up to amendment, to modestly improve it.

The division of responsibility for endangered species has created serious difficulty. An example is the marine turtle debacle. There is no proper answer to years of inexcusable stalling, and tergiversation by NMFS over the listing of desperately endangered species other than to take turtles altogether away from Commerce.

We strongly agree with Mr. Oberstar that the Act needs a mechanism for replacing domestic animals taken by predators protected under the Act. We are surely a wealthy enough nation that we do not have to require individual farmers to bear part of the costs of this Act.

We believe the Act ought to include a section establishing the Endangered Species Office as a separate service, which reports directly to the Assistant Secretary, and which is not enmeshed in the bureaucratic tentacles of the Fish and Wildlife Service. This would save a great deal of delay, and enhance the esprit de corps of the endangered species staff.

Finally, it seems to us that the international program must be vastly strengthened, and our ability to secure habitat abroad enhanced. We need, moreover, in this Act I believe, a kind of Pelley Amendment for wild animal products (aside from commercial fish) which permits us to cut off all imports of wild animal products from nations acting in a manner detrimental to the conservation of endangered species.

In the next ten years, I estimate conservatively and even sanguinely, that at least one hundred animal species will become extinct. The U.S. Government, either through direct action or by its failure to take action open to it, will probably bear responsibility for up to half of these extinctions. If we are going to act we must do so soon. The species are running out of time with terrifying rapidity.

I urge this distinguished Committee which wrote and reported out the great Act before us, to demonstrate again the vision and the sense of urgency which the situation demands, to force the Administration to reorder its distorted priorities and to authorize an Interior budget for 1979 no less than twice the fiscal year 1978 budget, with no less than 50 additional positions specifically authorized.

Mr. LEGGETT. Ms. Elizabeth Kaplan, Friends of the Earth.
Elizabeth, very nice to have you here.

STATEMENT OF MS. ELIZABETH KAPLAN, ASSISTANT LEGISLATIVE DIRECTOR, FRIENDS OF THE EARTH

Ms. KAPLAN. Thank you.

I am Elizabeth Kaplan, assistant legislative director of Friends of the Earth, an international environmental organization with 29,000 members in the United States and 12 international affiliate organizations around the world. Our Washington, D.C., office is located at 620 C Street SE. I appreciate the opportunity to speak to you concerning the Endangered Species Act, which many of us see as an endangered species itself.

FOE is pleased that there are no amendments contemplated for the act at this time. We hope that in the ensuing weeks the voices of reason will prevail in the committee and the House, and they will reauthorize the act unencumbered with crippling amendments. Environmentalists everywhere are watching the Congress closely on this matter. It is our belief that attempts to weaken this act will

be met with an unparalleled public outcry simply because there is widespread belief that the act is doing its job as it should.

We believe that the act has not demonstrated in any way that it will jeopardize every water project in the country as its attackers have claimed. An act as crucial as this to the environmental status of our country, one which causes us to take a serious look at the environmental consequences of our development projects, ought not to be cast aside on the basis of the effects it might have, but on the basis of its track record.

The passage of the Endangered Species Act in 1973 was a heartening indication of Congress' dedication to preserving the vital diversity of the animal and plant life of our world. Congress has recognized the irretrievable loss to our quality of life, to the riches of our knowledge and experience and to the potential benefits in medicine and science that come from the steady extinction of species of the world by human encroachment. It therefore mandated that the long-term values of our living diversity must be weighed against short-term benefits of "progress" in the form of public and private developmental projects. Millions of Americans applauded this act, and Friends of the Earth speaks for several thousand urging that the act be reauthorized in its entirety to continue its vital work.

So far, there have been several thousand points of conflict with the act and over 200 consultations, which except for 3, have led to the successful accommodation of the project to the species threatened. The act does not forbid the pursuit of projects that jeopardize a particular species. It requires, where Federal funds are used, consultation to alter the project to save the species. That is a significant difference.

Friends of the Earth urges this committee to look at the very successful track record of the Endangered Species Act before recommending amendments on the basis of what the act might do rather than what it is doing. Of the three cases litigated, the *Mississippi sandhill crane* case resulted in a successful design modification so as not to disturb the critical habitat of the cranes; in the *Indiana bat/Meramec Dam* case, the court found that insufficient studies existed to prove harm to the species and refused to enjoin the project. Only the *Tellico dam/snail darter* case has resulted in a deadlock on the project and this case has caused such a storm of controversy that we fear the Congress may be stampeded into amending the act completely unnecessarily, with the effect of destroying the act. The difficulties of one project are not sufficient evidence that the act is too restrictive.

I have been told that the *Tellico* case just illustrates that environmentalists don't really care about the endangered species, that they just want to use the act to stop projects. I must bring this up, because *Tellico* reveals just the opposite, that only when the agency or organization developing a project refuses to consult in good faith on how to accommodate the project to saving the species, as required by law, does it run risk of getting stopped.

The history of *Tellico* is that TVA, as soon as it discovered the threat to an endangered species, stepped up its schedule to 24-hour cutting and clearing, bulldozed the habitat area unnecessarily, and refused to consult with Interior on any design modifications to

accommodate the species. It is true that design modifications would have to include not closing or removing the dam. It is true that the dam is now 90 percent complete. It is also true that if the Congress feels that the completion of the Tellico dam is of greater national import than saving the snail darter, saving the last magnificent free flowing water on the Tennessee River, preserving the birthplace of the great Cherokee Chief Sequoyah plus the oldest archeological sites of continued human settlement in the United States, then the Congress has the right to give a specific exemption and should do so.

If Congress takes the other route, of weakening the act so that projects can be automatically exempted in some way, then there is virtually no act, and we have made a deplorable step backward to the days when this country focused only on the immediately apparent financial benefits of building bigger and better public works projects while failing to take account of the fact that irretrievable resources of wildlife, water, soil, or air may be lost forever.

We are confident that there will be few, if any more, *Tellico* cases. Interior has now firmly established its consultation process. Both the act and the discovery of the darter came in the middle of the planning of the project. In the future, habitat assessments will take place much earlier, with corresponding accommodation before money is spent.

Finally, we must keep in mind why it is vital to protect our endangered species, and the snail darter illustrates the reason perfectly. When a species is endangered, its habitat has been modified to the point where it no longer contains the elements necessary for survival. Elemental, but its significance is great. It means that the quality of the environment is deteriorating; it means most often that a special ecosystem is about to be destroyed, taking with it a rich assortment of plant and animal wildlife as well as valuable benefits to man. Why should we care about a 2-inch fish, or a homely snail, or obscure clam? It is difficult to comprehend their value until we ask how do they affect the intricate web of life of the area? What animals depend on them for food? What happens if there are no snails to eat algae in the area? Obscure creatures play vital roles in ecosystems, which our society is destroying at a rapid rate. The Endangered Species Act does not legislate against progress. It merely forces us to look at the consequences of our actions and state for the record what our priorities are. We should do that. The public should participate in these decisions, because when a species is gone it is gone forever. Only through such legislation as the Endangered Species Act will that crucial process occur.

Mr. LEGGETT. Thank you very much. That statement is very helpful and valuable to the subcommittee.

Mr. Oberstar?

Mr. OBERSTAR. Yes, I concur in the Chairman's statement. I like your reference to the planning early in the process.

I think the problem that we have encountered with carrying out the Endangered Species Act, which I alluded to earlier with Mr. Greenwalt, is that the act has been implemented only late in the process. The projects are already underway, and we then face a major confrontation between a vital economic or water resource project and another vital natural or wildlife resource.

Ms. Kaplan. Well, that is——

Mr. OBERSTAR. Implementation by Interior of the consultation process I think is important. We need to go even further than that, and I hope this committee will take that important step, with expansion under the Fish and Wildlife Authorization Act, along the lines of legislation I have introduced.

We hope that you can persuade other members of the committee that early planning is really what should be looked at, rather than amendment of the act.

Mr. LEGGETT. Very good.

Mr. Bonior?

Mr. BONIOR. Just a comment, Mr. Chairman, to Ms. Kaplan that it is a very fine statement, and it shows a keen sensitivity to our ecosystem, and I am supportive of what Mr. Oberstar just said and, hopefully, the act will be authorized without any major changes.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

I congratulate you on your helpful statement. Thank you.

Mr. LEGGETT. Very good.

Thank you very much.

Let me ask you this. I see you print your statements on both sides of the page, which is an environmentally sound procedure. How difficult is that today?

Ms. KAPLAN. I only scrambled the Xerox machine once doing it. You have to put the paper in very carefully when you turn it over.

Mr. LEGGETT. I see. I notice that the National Audubon Society has done the same thing.

Ms. KAPLAN. You must know, Mr. Leggett, we are not very wealthy organizations.

Mr. LEGGETT. Well, perhaps we should encourage all people who testify before this subcommittee to do it. It would reduce the staff's material by half in size, so let us be alert to that.

Mr. BONIOR. Mr. Chairman, Ms. Kaplan might want to raise that with her fellow environmentalists that she meets with occasionally, because I remember yesterday we had one organization before us—I cannot remember specifically whether it was the Audubon Society—that they used the traditional one side.

Mr. LEGGETT. I know if you are a lawyer and you pay by the page——

Mr. BONIOR. Perhaps that is the reason.

Mr. LEGGETT. Christine, would you care to give us your views at this point on behalf of the Society for Animal Protective Legislation.

STATEMENT OF MRS. CHRISTINE STEVENS, SECRETARY, SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION

Mrs. STEVENS. Well, actually, Mr. Chairman, on behalf of a number of different monitor organizations. I am testifying for the American Littoral Society, Humane Society of the United States, Greenpeace, Let Live, the Fund for Animals, Committee to preserve the Tule Elk, International Primate Protection League and the Society for Animal Protective Legislation. And that is it.

If we want to save paper even more, this statement is singled spaced. If we both singlespaced and printed it on both sides, that would be the final answer.

Mr. LEGGETT. Touche.

Mrs. STEVENS. The Endangered Species Act of 1973 is major legislation. The United States leads the world in the serious attention it has given this vitally important matter. The soundness of the law is due in no small measure to the work of this distinguished subcommittee, and the necessary appropriations and authorization to make possible continuing improvement in the administration of the act is essential.

We support the increase of \$715,000 in the fiscal year 1979 budget for the National Marine Fisheries Service Endangered Species Act administration. In particular, we hope the \$205,000 earmarked for sea turtle research will bring about vigorous action to prevent the extermination of these wonderful creatures.

I would like to submit for the use of the committee an article, "The Shame of Escobilla, For 90 Million Years the Turtles have Massed to Lay Their Eggs, This Time they Gather for Their Own Mass Murder," by Tim Cahill, You might like to be looking at it. It is a very remarkable piece of work.

[The following was received for the record:]

THE SHAME OF ESCOBILLA

(By Jim Cahill)

People often speak of holy places—areas that are awesome or harsh or tranquil—but you seldom hear of a place that is evil. I know of one. It is located on several acres of low tropical hills in the Mexican state of Oaxaca. The hills are green and there is a view of ocean, and these acres represent evil in a very pure form.

Here the senses are assaulted. An odor of death and putrescent meat rises up from these hills. Animal bodies are piled four and five deep, left to rot and dry under a blazing sun. As many as 50 vultures pick at the purple and black meat. They work with a joyless efficiency, steadying the carcasses with their talons as they yank at the soft flesh with their powerful beaks. The weight of all those bodies rotting generates an intense heat, so that when a breeze springs up, the air becomes artificially warm, heavy with death and decay. Standing in the path of such a breeze one is left feeling fouled, hopeless unholy.

Everywhere there is the constant droning of flies. The air is black with them. Working among the vultures and the flies in the awful stench are the most unfortunate people of the local villages: there is one man with a horribly contorted spine, another whose right eye is a mass of scar tissue. These men stumble over the rotting reptilian bodies like sinners confined to some virulent lower level of hell.

The final evil is there also. Not only are mature animals slaughtered and left to rot in the sun, there is also an immense pile of eggs—the next generation—and these, mixed with the entrails of their mothers, are rotting too. The entire pile is covered with maggots, a heaving mass of hissing malevolence.

That pile and those rotting bodies may signal the last time sea turtles will mass on the beach at Escobilla to lay their eggs. The carnage is being carried on despite the good intentions of the Mexican government. The motive is simple and timeless. It is sheer greed.

Two hundred million years ago reptiles owned the earth. There were turtles then as there are turtles now. It is thought that they developed from a marsh-dwelling lizard that hunched its shoulders forward, protecting its head with hard scales, in case of attack. Over millions of years these animals developed a shell, called a carapace, and a horny undershell, called a plastron. The body itself twisted into a strange configuration to conform to the confines of the shell.

About 90 million years ago, several species of turtle took to the sea. The stumpy, cylindrical legs became thin, flattened flippers. It was the last radical move these living dinosaurs ever made. As the stem reptiles gave rise to birds and to mammals, as the last brontosaurus thundered to earth, the turtles plodded on, survivors.

Today there are seven generally recognized species of sea turtle. One, the Pacific or Olive Ridley, an 80-pound animal with a shell the size of a manhole cover, is found in the warmer waters of the Pacific from southern Japan to Baja California. Like nearly all reptiles, the Ridley lays eggs, and these the females deposit in the sand on certain small stretches of isolated beach. In many places, nesting females are slaughtered out of hand, even before they can lay their eggs, and in other spots locals may collect nearly 100 percent of the eggs laid. For this reason, the 1975 reptile *Red Data Book* lists the Pacific Ridley as endangered: "In danger of extinction and whose survival is unlikely if the casual factors keep operating."

In Mexico, the government has established an enlightened program of turtle conservation. Beaches are patrolled, egg poaching is illegal and reasonable quotas have been set for harvesting the animals. On the beach at Escobilla, about 200 miles south of Acapulco, nesting female Ridleys come up out of the surf between the months of July and November. The massings occur about once a month, on certain star-swept nights when the moon is entering its last quarter and when the winds blow inland from the sea. Local people call this an *arribazón*, and some say that as many as 200,000 turtles have laid their eggs on one four-mile stretch of beach in previous years. If this estimate is even close, Escobilla is the site of the largest *arribazón* in the Americas.

On Saturday, October 1st, 1977, I stood on the beach at Escobilla in company with an ABC-Sports TV crew filming an *American Sportsman* segment. The show concerns itself with celebrities and their adventures with and reactions to animals. The *arribazón* was fine meat for *Sportsman*. One of the celebrities was Outside's Jack Ford, who had informed me of the expected October *arribazón*. The ABC crew was gracious enough to make room for me on their charter flight from Acapulco to Puerto Angel, an hour's drive from the beach.

No one lived on the sand itself—no fresh water—but nearby there was a compound composed of a *palapa* and several red tents housing 11 Mexican marines who patrolled the beach to prevent egg poaching.

We arrived in time to see the *morriña*, the hatching of eggs laid during a previous *arribazón*. The beach was pecked with small depressions. As I watched, the sand would suddenly collapse into itself and, miraculously, a small black flipper would appear, the black dot of a head would emerge and finally the hatchling—not quite the size of a quarter and all black like some child's toy stamped out of hard rubber—would move off resolutely toward the sea. Ten, 20, 30 and more would dig their way out from the same spot.

The eggs were about the size of Ping-pong balls. When I found one hatchling struggling to break the shell, I peeled it away. The turtle was curled over a bright, yellow-orange yolk to which it had been connected by a kind of umbilical cord. The hatchling pulled away from the yolk—the little mark on the bottom of the plastron is called a yolk scar—and crawled off toward the water.

All up and down the beach, tiny turtles were making their way out to sea. There were half a dozen men walking the beach with white styrofoam boxes, collecting the hatchlings. I saw dozens of boxes containing about 200 animals apiece, and was told that the men were doing something scientific that had to do with the preservation of the Ridley. No one seemed willing to tell me any more than that.

Later, I sat under the *palapa* watching the sunset with Juan José de la Vega and Bob Nixon. De la Vega, 29, is director of the Cosmographic Society, a Mexican conservationist group. He wears his hair to his shoulders, sports a wide gold bracelet and speaks good English in a relaxed, offhand fashion. Nixon, the writer for the *Sportsman* segment, is blond, crisply efficient and, at the moment, he was clearly unhappy with Juan José for what appeared to be good reason.

De la Vega had proposed the segment to Nixon, indicating that the turtles of Escobilla were in danger, that a man named Antonio Suárez, owner of a company called PIOSA, was slaughtering the animals out of hand. "Soon," Juan José said, "there will be no more *arribazones* at Escobilla."

The problem was that Nixon and I had just learned that the men with the styrofoam boxes worked for Antonio Suárez, that this same Suárez had footed most of the bill for a new laboratory for the study and preservation of the turtles, and that this lab was supposed to put hundreds of thousands of hatchlings into the sea each year. The next day, Sunday, officials from the Mexican Department of Fisheries and the governor of Oaxaca would be on hand at a ceremony to dedicate the lab and, incidentally, honor Antonio Suárez and his contribution to the conservation of the Pacific Ridley turtle.

I'm pretty sure Nixon felt as I did: Juan José had attacked Suárez out of sheer lust for publicity. I told de la Vega as much, to his face.

Oaxaca was in the midst of a terrible drought, but dedication day, Sunday, dawned pale and cold, and a wet wind howled in from the sea bringing torrential rains. The important visitors would first inspect the PIOSA slaughterhouse, then move on to the nearby lab. Official cars bogged down on the muddy road from Puerto Angel to the slaughterhouse and a large banner welcoming the governor wrenched loose from a tree and whipped itself into tatters.

People dashed from the cars to the shelter of the slaughterhouse. Workers, dressed in green T-shirts and shorts, stood nervously about, surreptitiously ogling the important visitors. There was a pile of live turtles, helpless on their backs, in one corner of the room. They barely moved. Occasionally a flipper would jerk in a sad, spasmodic gesture.

In the center of the room was the killing table. It was a long, wooden affair accommodating ten turtles, and the front was canted down at a slight angle. The turtle was lifted onto the sloping surface, and the neck was placed in a semicircular scoop on the ledge at the downside of the table, so that the head was held stationary, in midair. The weight of its body against the ledge prevented the animal from moving. The turtles had lost their green sea color and looked as gray as the sky outside. The eyes were solid black and without expression.

One of the workmen drew a curious, silver gun with a wide red-skirted barrel. The Mexican camera crew moved in for a close-up. The gun was placed on top of the turtle's head. We heard a muffled thump. The animal's head jerked up, the black eyes bulged, a great lump formed at the throat, formed again, the mouth opened wide, snapped shut, and the eyes turned fluid and pale. Great gouts of dark blood burst from the turtle's head. Another man carried the dying animal to a spot near a short conveyor belt. A grooved tube caught the blood and carried it out of the slaughterhouse and about 20 yards down the beach into a cove.

"On killing days," Juan José whispered, "the cove is red with the blood of these turtles."

"Sure, Juan," I said.

The conveyor belt carried the turtle to another room where it was placed on a slaughtering table. Every turtle I saw gutted that day was a female, and all of them had eggs in their oviducts. The eggs and entrails were placed in a large plastic bucket. Later, I was told, the eggs would be taken to the new lab and buried in the sand and new turtles would grow from these eggs.

It was not, all in all, a very pleasant hour. When one of the ABC cameramen expressed some disgust with the carnage, a young Mexican biologist who spoke fluent English blistered him with an eloquent torrent of words. She was a plump, darkly attractive woman wearing very thick glasses. Mexico, she said, is a poor country. These turtles are a natural resource. They graze on their own, in the sea, at no expense to the people, and return every year for the slaughter. She and the other biologists would help set quotas so the turtles would survive, even prosper. "But you don't want us to harvest these animals," she said. "Then what will we eat?"

She referred not only to the 12 pounds of meat recovered from each turtle, but also to the money made by the fishermen, by the people who worked in the slaughterhouse and by those who fashioned the turtle leather. Even the bones of the slaughtered animals were left to dry, then ground into fertilizer. "Why don't you go back to your own country," she concluded bitterly, "and film your own turtles?" Her eyes glittered angrily behind her glasses.

Monday we went to see the lab. It was a sterile, newly constructed building only half a mile north of the slaughterhouse. I counted 96 small sea-water tanks containing about 200 hatchlings apiece, and ten larger tanks holding 500 hatchlings apiece. About 25,000 turtles in all, exactly the same size as the ones we had seen at Escobilla, and all, I was told, hatched at the lab.

We couldn't find a biologist in charge, but the workers said the hatchlings would be kept a week or two, maybe three, then released at sea, beyond the breakers. At Escobilla, I had seen the surf pound in and watched as the tiny hatchlings had been tumbled back onto the sand for hours. I had seen some eaten by crabs and was told that certain fish massed beyond the breakers and fed on the hatchlings as they swam out to sea. The turtles in the lab would be spared many of the usual causes of infant mortality.

On the beach, in front of the lab, there were eggs buried in the sand, and these were penned to discourage such predators as dogs and coyotes. In another area I saw a large, open sided building containing hundreds of the styrofoam boxes. Each was filled with sand and held over 100 eggs. There were two kinds of eggs buried in the sand and contained in the boxes: those laid naturally and taken from the beach at Escobilla and those taken from the oviducts of slaughtered females.

Two large tanks, containing mature males and females, had been constructed for the study of mating behavior.

A plaque on the front of the main building said that the lab was dedicated to the preservation and study of the turtles and that it was built by the government, by the fishing unions—called *co-operativas*—and by private enterprise. That last meant PIOSA—Pesquera Industrial Oaxaqueña Sociedad Anónima—and Antonio Suárez. PIOSA had put up most the money for the lab. Even Juan José admitted that. The lab seemed a perfect example of enlightened self-interest.

It wasn't until much later that night that certain things began bothering me. Some of the men working at the lab were the same men I had seen collecting turtles at Escobilla for that unspecified "scientific" purpose. Many of the men working at the lab were the same men I had seen gutting turtles at the slaughterhouse the day before. They all wore the same green T-shirts and shorts.

We had come to the lab unannounced. When we got there the men were taking the hatchlings out of the tanks and putting them in the boxes. We asked why. The tanks, we were told, were dirty, and since the pipes weren't working, they had to be emptied, cleaned and filled with new sea water. This made sense. Except . . . looking back on it, not one of the tanks was refilled until it became apparent to the workers that we meant to stay for some time.

It was Monday. The governor and the official had left. Was it possible that the turtles we saw—the ones supposedly hatched at the lab—had been brought in from Escobilla? For a day? For the governor's visit and the dedication? No, it hardly seemed possible. I was thinking like Juan José.

Still, it seemed worth another visit to the lab.

Slaughterhouse cove is a shove-off point for the turtle fishermen. The leave in shifts, two men to a 30-foot skiff powered by a 40-horsepower Johnson outboard. It is a 40-minute run north to Escobilla and, during nesting season, when the females are massing a mile out for the arribazón, there are turtles everywhere, as far as the eye can see. As many as 100 animals may be contained in an area the size of a city block.

Like all reptiles, the Pacific Ridley is dependent on external stimuli to regulate its body temperature. Primarily vegetarians, they feed on sea grasses in the early morning, then pull to the surface to bask in the warmth of the sun. As their body temperature rises, metabolic activity increases, digestion occurs more rapidly, and the stomach is emptied in preparation for another meal. When basking, the turtles are very nearly somnambulant. And easy prey.

I watched as a fisherman grabbed the loose end of a long rope tied to the gunwale of the boat and plunged into the water, a foot and a half behind a turtle. He grabbed the top of the shell with one hand and pushed down on the back of the shell with the other, forcing the animal's head and front flippers out of the water. Quickly, he slipped a noose over one flipper. His partner grabbed the rope at the gunwale and pulled the animal to him, heaving it up into the boat and flipping it onto its back.

Fishing this way, I was told, a two-man team can catch 25 turtles in an hour and make two runs a day. There are a score of boats working on the best days.

The fishing itself seemed almost too easy. Certainly it was a good deal easier than in previous years, the fishermen told me, when turtling had been banned during the nesting season and the animals could only be found far out at sea. Now they were massing for their own slaughter, and many more were being killed—killed during nesting season, in most cases, before the females could lay their eggs. Still, as a high official in the Mexican Department of Fisheries pointed out, the new lab was putting so many new hatchlings into the sea that, in effect, "less were being killed."

I spent some time diving with the Mexicans. The turtles, I found, were virtually, harmless when approached from the rear. They made no effort to escape or dive until literally touched. I came on them like the Mexican divers and rode them along the surface for several yards. The leather on the back of the neck felt surprisingly "dry," like the skin of a snake or lizard that you always expect to be slimy. Their faces, even while basking, had a pinched, disapproving cast and their mouths were turned down, like a child's drawing of a scowling person. They seemed unimaginably ancient.

I was joined, during one dive, by half a dozen dolphins. They frolicked, undulated beside me as I swam. The turtles, by comparison, seemed joyless, dreary beasts, altogether too intent on brute survival. I thought of them as the constipated accountants of evolution, and was, in turn, thoroughly and contemptuously ignored by them on one occasion, diving with a fleeing turtle, a dolphin actually buzzed the slower animal in a silly, playful manner. We—the dolphin and I—were the mam-

mals: fast, giddy, intelligent. In evolutionary terms we were children teasing our elders.

An unsettling thing happened when we returned to slaughterhouse cove after the first day of diving. The manager of the slaughterhouse asked us all to leave, and he threatened force if we didn't. Why had they been so anxious to have us film the dedication on Sunday, but wanted us out of there on Tuesday? Looking back on it, I should have connected it with our visit to the lab on Monday, and my misgivings about what I had seen.

Back at the hotel Jack Ford and I talked about our dive over a beer, Ford had happened upon a pair of copulating turtles, and had a story to tell.

The male of the species is the worst sort of opportunist. Knowing, instinctively, that the females must mass for nesting, he lies in wait. Intercourse takes place in the water. The male secures himself to the top of the female's shell with two curved nails, each located on the inside of a front flipper. Turtles have five fingers, and that curved claw, located about halfway up the appendage, corresponds to our thumb.

Having nailed himself on at the tip, the male curves his longer, heavier tail under the female's shell. The penis is housed in the tail and extruded from the anus.

"They weren't moving," Ford said, "they just sort of wallowed there in the swells. The really didn't look like they were having any fun, I watched them for about 40 minutes, but they may have been connected for hours . . ."

"They're turtles," I said, "they do everything slowly."

"When the male pulled out," Ford said, "I got a look at his equipment." Jack spread his hands the full width of his chest, then described the diameter of a baseball with the thumb and forefinger of both hands. "They are very well equipped animals," he said.

Local fishermen are equally impressed, and their stories of bizarre copulatory feats among Pacific Ridleys bugger the imagination. It is thought that sperm is stored in the female's genital tract and can continue to fertilize eggs for years, and that a nesting female may mate several times a day on the way to a nesting site. A female crawling onto the beach may exhibit scratches on the neck and her shell may be broken near the head where the male has held her.

But it is the size of the of the male equipment and the long copulatory periods that the fishermen expand upon. And this has led to the myth that eating turtle eggs is good for the human male. The eggs are said to put lead in the old pencil.

In Spanish eggs are *huevos*, and egg poachers are called *hueveros*. Poaching is a crime and the *hueveros* of Escobilla were not delighted with the idea of an interview. I had rented a Volkswagen bus and a driver in the town of Pochutla and was trying my luck at the *cañtinas* along the highway near the beach. No one, at three *cañtinas*, believed that people actually poached eggs. They asked where I had ever heard of such a thing. A surprising number of people I talked to didn't even live in the area. Some citizens expressed great amazement when told that less than two miles from where they sat turtles occasionally came up on the beach by the thousands.

My driver for the day, a slick young Mexican with shiny hair and a moustache, lost his patience after a few hours. In his capacity as a public driver, he said sadly, he had sometimes picked up people whom he believed might have been carrying eggs. he had seen one such man walking on the highway and, if I wished, he would drive back and ask him if he wanted to talk. The young man in question wore a straw hat with an extravagantly folded brim and a shirt which was cut off below the pectorals to reveal an elaborately muscled brown stomach. For 50 pesos he agreed to talk for an hour.

The man, whom I'll call Alfredo, said he had already heard that a gringo was asking questions. He chose to ride on the floor of the van and directed us onto a dead-end road shielded by rows of corn.

Alfredo said that a number of local people poach eggs, but that the *hueveros* are not organized as such. On a moonless night people just seem to gather at the Escobilla bridge; and, after much discussion, about ten are chosen to work that night. They split up into pairs and walk through the jungle, off the trail, finally crawling up over the cactus dunes. One man lies in the dunes, near the cover of the jungle. The other creeps out onto the beach.

Even on moonless nights, the star glow on sand and sea makes it light enough to work. Poking into the sand with a sharp stick, the *huevero* feels, more than hears, a muffled pop when he hits the first egg in a nest. Digging with his hands, he empties the nest of its hundred or so eggs, filling a small sack that he takes to the man in the dunes, who places them in a large sack.

If the soldiers come—you can usually see them flashing a light—the man in the dunes fades into the jungle with the large sack. The *huevero* on the beach drops his small sack and runs for the jungle at top speed. The soldiers wear boots and carry heavy rifles. The odds are pretty good that the *huevero* will make the jungle.

Working this way, two men can steal as many as 8000 eggs in one night. Eighty nests. His share of the take, 4000 eggs, Alfredo could sell to a driver for 1500 pesos, about \$75. He was chosen to go to the beach four times a year, tops. His poaching income came to \$300 in the best of years. His annual income from growing corn, Alfredo said, was \$500. He was responsible for a family of ten and the temptation to steal eggs was very great.

Alfredo was not proud of night work. He wanted me to know that many of his eggs were given to the poorest families, to widows, for instance, with starving children. In the past, Alfredo said, when there was a drought like this year, hungry people could go down to the beach and the soldiers would let them dig up a limited number of eggs to eat. Now, PIOSA was killing all the turtles and the soldiers would not let starving people dig for eggs. Everyone, Alfredo said, knew that the turtles would soon be gone. He had lived near Escobilla all his life, and he thought he had a right to earn some money from the eggs before PIOSA killed all the turtles.

Later, over beer and mescal at a *cañita* far from Escobilla, I talked with my driver. He wanted me to understand that he had never done such a thing, but that he had heard how the business worked. A driver with a legitimate load makes a space and caches 40,000 eggs or more. There are checkpoints along the major highways, so egg smuggling is a sweaty affair. In Acapulco or Mexico City the eggs are sold under cover of darkness to a man in the marketplace. The driver can make as much as two pesos per egg, so a single 40,000 egg load can bring a driver about \$4000, tops.

In the more cosmopolitan cities, a turtle egg sold in a restaurant can cost as much as nine pesos. The eggs are said to be somewhat oily and they are often served fried, five or six at a time, and covered in chili sauce to mask the taste. Sometimes eggs are served raw, in the shell. The top is peeled off, a squeeze of lime is added and the entire mess is dumped into the mouth. The eggs are eaten, primarily, by wealthy and ignorant men who cannot sustain an erection.

The second visit to the lab was a revelation.

All the tanks were empty. There were no hatchlings. There was no sea water. Nothing.

The large tanks outside, containing the mature turtles, were empty. One misshapen adult female lay on her back, dead beside the tank. She had been left there to bake in her own shell.

Ten styrofoam boxes, like the ones we had seen at Escobilla, were stacked by the side of the building, apparently forgotten. There were 200 hatchlings in each box and all were dead or dying.

The only person at the lab, an old man eating his lunch under a tree, explained that all the hatchlings had been dumped at sea. As for the styrofoam boxes, somebody must have forgotten them after they brought the hatchlings in from the beach at Escobilla on Saturday, the day before the dedication. Sure, he said, it would be okay if Juan José put the hatchlings out to sea. Somebody had just forgotten to do it. The mature adults, the man said, had been taken to the slaughterhouse.

That night I apologized to Juan José de la Vega.

Had all 25,000 hatchlings been brought in from Escobilla? To impress the officials and the governor? To put on a sideshow for the Mexican TV cameras and the Mexican people?

Hunting was now allowed during nesting season, and if officials at the Department of Fisheries can be taken at their word, it was this lab that they expected to compensate for the carnage. But it was apparent that the lab wasn't functional.

Even if the lab were functional, a good argument can be made that it might have been worse than useless; that some projects would yield an incredibly poor rate of return and that others might actually contribute to the extirpation of the species. From reading, I had learned that there were similar labs all over the world, and some interesting work has been done at them. For instance, there was the matter of burying eggs taken from the oviducts of slaughtered females: experiments conducted on Green Sea turtles, with similar nesting habits, showed a 14 percent hatch rate among replanted eggs from slaughtered females compared with a 63 percent rate in eggs from undisturbed nests. More to the point, Juan José had opened ten boxes at the lab and examined ten eggs, all from slaughtered females. In all cases the yolks

had turned milky and had begun to disintegrate. Few, if any, eggs from the slaughtered females would ever hatch.

As for dumping the hatchlings at sea, the authorities are divided, but according to Dr. Archie Carr, one of the world's foremost herpetologist, it may be a useless endeavor. The struggles of the first day may be an integral part of the life cycle. Hatchlings in tanks may become pen happy and find themselves unable to feed at sea. Dumping could put the hatchlings in an unnatural current. Finally, whatever mechanism it is that tells females to return to the beach of their birth must surely be implanted at birth. It is quite possible, even probable, that none of those 25,000 dumped hatchlings would ever see the beach at Escobilla.

Time was running out for the ABC crew. Their original concept—100,000 turtles on the beach—was scrapped in favor of good footage of at least one turtle laying her eggs in the sand. Walking the beach each dawn, I was able to count an average of 12 new tracks and nests a night. Twelve nests, separated by four miles of beach and 12 hours of darkness. Even with a wooden sled towed by a burro and several hired men to carry equipment, the crew was very lucky to get good nesting film. As it happened, the turtle that was finally filmed came up onto the beach no more than 400 yards from our campsite.

She arrived unseen, riding a breaker, then crawled over a strip of wet sand and up the gently sloping beach. Adapted to sea life, she moved laboriously on land. Her flippers were spread out to their full extent on the sand, and they made awkward semicircular patterns in the sand as she dragged the weight of her body the 40 or so yards she needed to get above the tide line.

Every few minutes she stopped. Her lungs, designed for breathing in the buoyancy of the sea, were compressed by the weight of her body. She exhaled. The throat pumped and she inhaled. It sounded, eerily, like the amplified breathing of a man surfacing after two minutes underwater.

It took her 20 minutes to select a nesting site. Settling herself into the sand, she curled one of her back flippers and flung sand almost directly over her head. Within minutes, her head and carapace were covered in thick, clinging sand. She stopped to draw a few ragged, tearing breaths. Her body was tilted down at a slight angle, the backside sunk into the hole.

The television lights exploded in the night, but the turtle, driven by instinct, was oblivious. The body contracted, the head sunk into the sand and two strong cords strained in her neck. She was scratched and raw there where some male's claws had dug into her during copulation. The cloaca contracted and a moist white egg dropped 18 inches into her nest. Another followed, then another. She lifted her head to draw another breath and then the contractions began again.

"She's crying," someone said. Tears were rolling out of her eyes and tracking down the sand that clung to her face. No matter that the tears are only a way of eliminating salt from the system: the mother's labored breathing, the seemingly painful contractions, her tears had turned the filming into a wrenching emotional experience.

A hundred or so eggs were laid, two or three at a time. The back flippers curled more delicately than one would have thought possible, and the mother spread sand over her eggs in a gentle, loving gesture.

At this moment, the Mexican biologists approached the lights. Producer/director John Wilcox shouted to a translator, "Tell those people to please stay out of her track." The plump woman exploded. "We speak perfect English," she said. "We are biologists. We have a right to study this animal." Bob Nixon jogged over to talk to her.

Having covered her nest, the turtle lifted herself up onto the tips of all four flippers and fell on the sand, packing the eggs and disguising the nest. She repeated this ludicrous dance a dozen times or more, then, backing way, she flung more sand over the area with her front flippers. Satisfied, she started back out to sea. I followed her down with a flashlight. When the first wave hit her, she seemed to relax. The sand came off and her sea color shone in the light. The backwash pulled her out a few feet, a second wave hit her and she was gone.

The question of how many turtles there were out there haunted me. The biologists—the people who were supposed to know—had been willing to argue over one animal.

ABC's charter plane was ready at the Puerto Angel strip when word came in from Escobilla that there were turtles in the breakers. It was a sign that had preceded other arribazones. I elected to pass on the flight and stay another night on the beach with Bob Nixon, assistant cameraman Gordon Waterman and Juan José de la Vega.

The night was mild, a gentle breeze blew in from the sea, and the moon was in its final quarter. This had to be the night. That day there had been turtles in the surf.

Our group built a fire. The marines built one of their own and another was started by the biologists. They were measuring out ropes which would be used to encompass a certain area. Stakes had been driven into the ground all along the beach to divide the area into like sections. The biologists would count the number of turtles nesting between the ropes and multiply by the number of stakes for an estimate of the total number of nesting turtles. Clearly they expected the arribazón.

A few marines stopped over for a drink of mescal. We had filled several soft-drink bottles with that white, searing liquor at the nearest *cañina*. The marines were happy. This would be the night. We sang some songs.

We shared our mescal with a local man who had lived 150 yards from the beach for ten years. As little as five years ago, he said, each arribazón took seven or eight days. There were four a year and the beach was black with turtles. Now, he said, there were fewer turtles. Too many had been killed by PIOSA. He thought there would be no arribazón.

I ate some sandy peanut butter on Bimbo bread, drank more mescal and walked the beach. It was seven, eight, nine o'clock. In previous years the turtles had begun coming in directly after sunset. Still, there were songs from the campfires.

Our group talked with representatives from the Department of Fisheries and with fishermen from the co-operativa Reforma Portuaria. I was able to piece together this version of the events at Escobilla:

There are seven co-operativas, or fishing unions. PIOSA pays the fishermen by the turtle, and the fishermen are licensed by the Department of Fisheries, which also checks the union records to see that the quotas are not exceeded. Each co-op has an equal number of turtles it can catch each month. When José Lopez Portillo assumed the presidency of Mexico, he promised to develop industry. Last year fishermen from five of the co-ops, seizing the opportunity, went to a Mexican court and asked that the traditional ban on turtling during the nesting season be lifted. During other times of the year, they said, the turtles were too far out to sea and it was difficult to catch many in the small skiffs. The ban on fishing during the nesting season, they said, was depriving them of their livelihood. The judge agreed with the fishermen. The ban was lifted and the Department of Fisheries raised the yearly quota for Oaxaca.

Victor Valdez, the co-operativa Reforma Portuaria, said that two of the co-operativas, including his own, had opposed the lifting of the ban, arguing the such untimely hunting would decimate the turtle population. Most fishermen, Valdez said, know this. But everyone is poor and now, for a few years, a fisherman can nearly double his yearly wage, and with less work. Another fisherman said that he knew that leaders of the five co-ops, bringing suit to lift the ban, received money from Antonio Suárez and that Suárez had pressured them to bring the suit.

Juan José nodded. "Last year," he said, "the Cosmographic Society made a film about these turtles. We interviewed the judge who lifted the ban. We asked him how many turtles there were at Escobilla. It was very clear that he knew nothing of the situation here and it was a very embarrassing piece of film for him and for PIOSA. Antonio Suárez later invited me to lunch. He wanted to 'buy' our film. He offered me 80,000 pesos." De la Vega refused and the film was shown on Mexican television.

I passed him the mescal and stumbled through my fourth or fifth apology to him in the last few days. He waved it off with good grace. "I knew if people came here," he said, "they would see for themselves what is happening."

The business of lifting the ban and raising the quota is an experiment. The lab is a safety valve for that experiment. Even if the biologists decide that the *Ridleys* are being extirpated, officials can rest easy because the lab is supposed to put some huge, astonishing number of turtles into the sea each year. I have that statement directly from a high source at the Department of Fisheries.

We talked, finally, with some of the biologists. They had their own mescal and were excited about the arribazón and the discussion was not as bitter as it had been earlier in the week. None of them, to a person, would answer my questions, but we talked enough for me to form some impressions. They were, I think, sincere in their desire to set reasonable quotas: ones that would eventually increase both the harvest and the number of turtles as a whole. They had been hostile because foreign conservationists put pressure on the government and the government responds by firing biologists. I felt that they truly believed that if they filed a strong enough report, the government would reinstate the ban on turtling sometime during the next few years.

I thought about the Mexican TV cameras and all those officials whose only taste of Escobilla had been seeing 25,000 hatchlings at the lab. It had been very impressive. I had no great confidence that the ban would be reinstated.

It was 10 o'clock and still we had seen no turtles. I wondered if the local people were right, that there would be no arribazón. The Ridley, I know, is the only turtle to nest in such great numbers, and I wondered if it could be the numbers themselves that triggered the arribazón.

If that were so—and this theory is a layman's guess—it might explain why there had been normal arribazones July through September, but not in October. Each of the seven co-operativas was allotted 1500 turtles per month, for a total of 10,500 animals. In July 10,500 turtles were taken, but by August the cumulative total was 21,000, and in September that number rose to 31,500. Now, in the first week of October, the count was rapidly approaching 40,000 animals, and nearly all of them females, laid across the killing table at PIOSA.

By midnight there were still no turtles. The songs from the campfires became louder, more brittle, drunker. There were the sounds of voices raised in anger.

I took another four-mile walk. Bob Nixon spoke with the woman biologist. She had been drinking, he said, and seemed to be very depressed, almost near tears. "If you want to see the arribazón," she said, "go to the dump." In the firelight, behind her glasses, her eyes glittered, wetly.

The dump is located on several low hills just southeast of the slaughterhouse. When the turtles have been slaughtered, when the 12 pounds of good meat have been stripped from the bone and the leather has been stripped from the head and chest, the remains are dumped onto these hills like garbage and left to dry in the sun before the bones and shells are ground into fertilizer.

The stench there—the odor of death—was unholy. It clogged my nostrils and sent bile rising in my throat. Vultures retreated reluctantly as I approached. Here and there I saw flippers stripped of their flesh, their five fingers, like yours and mine, jutting up out of black putrescent meat.

There were eggs there too, where no eggs should be. Mixed with the bowels of their slaughtered mothers, they were heaped into a sprawling pile and covered with maggots. I suspect someone will tell me that PIOSA only chooses the finest eggs to go bad in the sand or in those styrofoam boxes, and that these were rejects. But I saw that pile with my own eyes. There were thousands upon thousands of eggs, all rotting in that evil heap.

I was, quite literally, sick to my stomach.

On the telephone, Antonio Suárez is a very persuasive and charming man. He is proud that, in his capacity as director general of PIOSA, he employs some 1000 persons who fish for turtle, shark, red snapper and lobster.

He denied that he ever offered Juan José de la Vega money for a film.

He denied that he offered the leaders of some co-operativas money, or that he pressured them in any way, to bring suit against the ban on turtling during the nesting season.

He said that it was not true that he was responsible for depleting the species.

"It is my opinion," Antonio Suárez said, "that the turtle is a resource we ought to take advantage of, but that we ought to protect the species, that we ought to have quotas, and that we ought not to protect a bigger quantity than the species can support, and that we may always repopulate the species."

Suárez was proud of the new lab and said that it was true, that he had paid for most of the construction costs. He said the lab had dumped *20- to 30-million hatchlings into the water in the months of July through September!* He said that the Department of Fisheries had checked on this number.

It is possible that Suárez misspoke himself. Officials at the Department of Fisheries said they had no such data. And, in late November, one high-ranking biologist involved with the lab admitted *that it had not been functioning when I was there. He said he expected it to open by February or March.*

Suárez was quite specific about the October arribazón. He said that while arribazones are always larger from July through September, some 50,000 Ridelys had laid their eggs on the beach in October. Again, this is somewhat at odds with information received from the Department of Fisheries. In late November, officials there said there had been no October arribazón.

People I know and trust were on the beach at Escobilla during the entire month of October. The moon entered its last quarter twice and the winds blew in the sea and, for the first time since anyone who lived near the beach could remember, there was no October arribazón. Only 90 million years of evolution going to waste on the beach at Escobilla.

Mrs. STEVENS. The article documents shocking falsification by the so-called laboratory whose owner is more interested in putting on a show for television so he can continue to profit from the slaughter of the nesting turtles than he is in preserving the turtles into the future.

This man's profits should be cut off by all civilized nations. Strict enforcement of the act with respect to sea turtle products is essential. The shameful delays caused by the Commerce Department in making decisions about sea turtles doubtless helped this individual in the hideous destruction he has wreaked among these magnificent creatures. The Department can make up for it now by redoubling enforcement efforts.

The first thing it should do is to complete the listing of the sea turtles. The planned research continues to be on population assessment and habitat assessment. Nothing is planned to stop this massive destruction for commercial purposes as described by Mr. Cahill.

A spokesman for the National Marine Fisheries Service informed me that it is expected that the green, loggerhead and Pacific Ridley turtles will be listed as threatened in 6 to 8 weeks, but the delays in this weak listing have already been intolerable.

As you know, it has been years that the listing has been in the works.

The Pacific Ridley is already listed on appendix 1, endangered category, of the Convention on International Trade in Endangered Species of Fauna and Flora. Yet the United States has still failed even to put it into the threatened category. The leather from these turtles is shipped mainly to Italy for processing. The meat is left to rot.

Until listing is completed, products from this leather can be shipped back into the United States. And there must be no domestic taking.

The time left for several species of these turtles is so short that immediate action is essential.

Mr. Chairman, I hope that you will bring home to the Department of Commerce the extreme urgency of the situation. A leading turtle expert, Richard Felger, states that Kemp's Ridley will be extinct this year. The Pacific Ridley will be extinct in 8 years or less, the green in 3 years or less unless the present trends are reversed.

The duty of our Government is clear. Not another dollar should be allowed to leave this country to pay for any product made from these vanishing creatures.

And right now there is a meeting at the World Wildlife on this very subject, where I think even more information will be forthcoming.

We support the fiscal year 1979 budget figures for the Department of the Interior endangered species program.

I will not read those, since you, of course, have them.

The difficulties of enforcement of the Endangered Species Act are great. One serious lack is an adequate number of inspectors to examine and refuse or accept wildlife shipments. At the present time, for example, there are only six inspectors for New York. To do an effective job the number should be doubled or tripled.

You may recall the uncovering of a ring of international fur smugglers in 1973 when a carton marked leather goods broke open and an alert airline employee noticed spotted cat fur sticking out of the crate. Clearly, Interior did not have enough inspectors then to examine shipments for accuracy, or the smuggling would have been detected in a routine inspection. Equally clearly 6 inspectors for a port the size of New York is inadequate, and throughout the entire country there is only a total of 35.

If the authorization for the coming 3 years can be increased, we recommend that it be placed in enforcement.

We hope that Interior will make the decision to ban the importation of elephant ivory. It will be cheaper and easier to enforce a total ban than a partial ban. Regardless of the final decision on the type of ban, more personnel with good training will be essential.

At the present time there are at least 15 part-time or temporary appointments which cause a substantial turnover among these inspectors, reducing their ability to gain experience in the job.

We urge that the Congress give Interior the wherewithal to do the job that needs to be done.

I was very glad to hear, Mr. Chairman, your questions about these part-time people. There is nothing really wrong with being part time, but if there is a constant turnover, I think it does definitely lead to weak action.

In closing, Mr. Chairman, we believe that the Congress can do much to insure that endangered species are preserved through the work of the Departments of Interior and Commerce. Endangered species need all the protection that it is possible to extend to them.

The next few years will spell success or failure throughout the entire world with respect to maintaining the inestimable diversity of life forms which we are fortunate still to have with us.

All is not smooth sailing in so broad an endeavor, of course. But it would be disastrous if critics of the law's administration should succeed in weakening this landmark legislation. Nor should the undoubted fact that delays have sometimes taken place in the processing of permits which were appropriate to grant, cause an attack on the essential requirement for examining requests with care.

The Federal Wildlife Permit Office is responsible for administering the Convention on International Trade in Endangered Species of Wild Fauna and Flora. This treaty needs to be cherished and nurtured until it grows large and strong enough to stand up internationally and bring a final halt to profiteering and smuggling in the greedy race to exterminate rare animals and plants for the sake of money. There is much work ahead. Improvements can be made administratively.

At this time, this subcommittee, which fathered the Endangered Species Act should encourage its development with adequate authorization for appropriations.

Thank you.

Mr. LEGGETT. Thank you very much, Mrs. Stevens, that is very helpful. I note the interest in banning the importation of African ivory. California is already doing this and the Federal Government is moving with respect to threatened elephants. I think we will make some progress in that regard.

Certainly, organizations like yours help to alert larger numbers of people to the contraband, which continues being imported into this country. The public citizenry can help in enforcement.

It is very, very difficult to inspect every single crate and every single box. We may fool ourselves sometimes, and think that we are doing that, but we know that we are not. There is too much contraband that comes into this country. We have too many imports and exports, and we have to develop a zealous public spirit.

That is where the enforcement is going to come in. That is where your organization is very helpful.

Mr. Oberstar?

Mr. OBERSTAR. I note your very considerable attention to the problem of sea turtles. Are you at all encouraged by the budget plan for sea turtle research, and action by the submission here in the Department of Commerce, budget of \$730,000?

Mrs. STEVENS. Well, I think unfortunately that what we have budgeted, the \$205,000 for sea turtle research, is what I would call old fashioned in its approach. Such an approach—population and habitat assessment—should have been taken a long time ago, but now we have got to act faster than that. We cannot just sit there and count how many are not there any more. That is what it really amounts to.

And when you see these pictures of just the great piles of turtle carcasses, you see what has happened. There is a Spaniard named Suarez, who now controls all of the turtles that come up on the Mexican Pacific coast, and we understand that he makes about \$60 a piece on turtles himself. He pays about \$4 to the fishermen, and what happens to the rest of it, appears to be very, very unsavory, because this is the first year that the Mexican Government has allowed turtles to be killed as they come up on the beaches to lay their eggs.

It is obvious you cannot start killing the very turtles that are laying the eggs, and still have more, but this man, I do not want to take too much of your time, if you read the article, you see how he puts on a show for television, and one thing after another was found to be absolutely untrue.

The reason that he got the permission to kill them when they were coming to lay their eggs, was the claim that his company would raise the little turtles from the eggs that were inside the mother turtle; they would be taken out, and put in little styrofoam boxes to hatch, and then the baby turtles would be taken out to the sea, out beyond the breakers, and he claimed that he was putting back vast numbers of turtles so there would be more and more turtles.

Well, the article shows that that is a phony claim. There ought to be a complete change, and these nesting turtles should be protected. The Mexican Government does have marines there, and they have done a good job, up to a point, but they are pulled off during the wrong time of the year, and these turtles are slaughtered, and the money is being made. I really cannot pronounce Spanish, but there is something called arribazons of the turtles.

There used to be eight every year; now it has gotten down to two, and everybody in the whole area says pretty soon there will not be any. That is why we emphasize so strongly that these endless

delays between Commerce and Interior, foot dragging, and of course, it involves other turtles, too, the ones that are killed for turtle soup, these ones happen to be turtles that are killed for leather. It is a very serious situation, and I just hope the subcommittee will demand rapid action from Commerce.

These turtles really should be on the endangered—and not on the threatened species list, and there should be very, very careful checking—Mr. Chairman, you are right, not every single box can be opened, but if there is very effective spot checking, and the inspectors have suspicious minds, a lot more enforcement could be accomplished, too.

Mr. OBERSTAR. So your concern is not for the research aspect of the budget, but more to the enforcement actions under the law. You feel that ought to proceed at a much faster pace than it is now going?

Mrs. STEVENS. That is right. I think the research is a good thing, but you cannot just sit there and do the research without getting action.

Mr. OBERSTAR. Thank you, Mrs. Stevens.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

Thank you very much.

Mrs. STEVENS. May I just add one thing? Your question about why there are not more proposed listings in the Commerce Department, I think was a very good one. I hope you will pursue it further, because I believe that there are many creatures that should be examined by Commerce for listing, and it is not being done. I think that further probing would be very much in order.

Mr. LEGGETT. I suspect they might list the abalone if we raised enough fuss, but then we could not eat it.

Thank you very much.

Mrs. STEVENS. Thank you.

Mr. LEGGETT. Now, we have Ann Graham with National Audubon Society.

I notice that your statement is printed on both sides.

STATEMENT OF MS. ANN GRAHAM, ASSISTANT WASHINGTON REPRESENTATIVE, NATIONAL AUDUBON SOCIETY

Ms. GRAHAM. yes, I am very glad I did that today, too.

I am Ann Graham, a Washington representative of the National Audubon Society. I am here this morning to express the society's unequivocal support for the Endangered Species Act of 1973, one of the most momentous and farseeing pieces of environmental legislation ever written.

The National Audubon Society is a private citizens organization of 400,000 members nationwide dedicated to the conservation of wildlife and its natural habitat.

On behalf of Audubon, I commend this subcommittee, and especially its chairman, Congressman Leggett, for a courageous stance in defending the act thus far by holding off dangerously weakening amendments. We are further looking forward to the opportunity next month, during oversight hearings, to demonstrate the eminent workability of the act.

When the Endangered Species Act was written, it was not simply to satisfy a few environmentalists, not is it supported today by that group alone, but by Americans who see their relationship to natural systems as inextricably entwined with their own health and well-being.

To achieve our goals of protecting delicate physical and biological systems we come to the focus of this morning's hearings—appropriations authorization. Congress, by reauthorizing and appropriating money under this act, signals its continued support of the act's crucial goals.

Likewise, by skimping on the program, the House of Representatives would take a step back from the enlightened thinking which ushered the act into being in 1973 by an overwhelming majority.

The administration has recommended an authorization of approximately \$16.5 million for the fiscal year 1979 operation of the Office of Endangered Species. This figure is woefully inadequate, and in fact, should be twice that much, perhaps nearer \$35 million. In addition, we feel that authorization should be granted for at least 5 years.

Many of the problems that have arisen to stir the outcry against the act could have been alleviated had there been sufficient funds and manpower to administer the act. Research, designation of critical habitat, species listing, law enforcement, and consultation have had to be accomplished in a piecemeal fashion.

The area in need of greatest boosting is the section 7 consultation requirement which became mandatory as of January 1978. Thorough and conscientious consultations between the Fish and Wildlife Service and agencies engaged in project planning are the key to the ultimate success of the Endangered Species Act.

To date, the Office of Endangered species has conducted thousands of successful consultations in its attempt to insure that development heed species survival. More full-time, highly qualified staff are imperative to the continued success of the often delicate consultative process.

As this consciousness of endangered species permeates Federal project planning agencies, those agencies will seek thorough consultation with full documentation—if only to avoid undue delay. There will be no Tellico Dams in the future.

Another area in need of greater funding is the portion of the program designed for critical habitat identification. President Carter, in his environmental message of last spring, placed high priority on an accelerated program of such identification. Again, an attempt to avoid potential conflict at an early stage.

It behooves both supporters and critics of the program to generously fund a highly qualified research staff. Still another underfunded area is law enforcement. Without a strong law enforcement arm we undercut our role as a leading nation in the battle to stop international traffic in threatened and endangered species.

Because of the foresight of this committee and the entire Congress we have today taken steps to halt the devastating decline of whooping cranes, condors, and eagles, to name a few, and with increased support through generous funding, endangered species lists will eventually become shorter rather than longer.

The National Audubon society looks forward to the continued championship of this committee in defense of the values exemplified in the landmark Endangered Species Act. We thank you for this opportunity to present our views.

Thank you.

Mr. LEGGETT. Thank you very much.

That is a very helpful statement, and we share your views with regard to the appreciation of the good work of this subcommittee.

Certainly, we cannot be effective unless we have your support.

Ms. GRAHAM. You certainly have our support on this one, there is no doubt.

Mr. LEGGETT. Mr Oberstar?

Mr. OBERSTAR. No comments, Mr. Chairman. It was a fine statement, and quite a wise prediction that if the Endangered Species Act does work and is adequately funded, the list will in time become shorter.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. No questions, thank you.

Mr. LEGGETT. Thank you very much.

I think we can bring the hearing to a close at this point. I believe that it is the intention of the subcommittee to alert the administration that we are certainly not satisfied with the personnel numbers that they have allocated, particularly to the Fish and Wildlife Service, in this subject matter.

This does not appear to be the reorientation of priority that we would like to see. We are going to express ourselves. Mr. Bedell is going to be drafting a joint letter for Mr. Forsythe and myself. I would anticipate that we will seek an authorization level which will be more in consonance with the aspirations of the agencies, rather than OMB, and we will allow for reasonable escalation over the next 3 years so that we will have a reasonable figure target program, and know whether or not we have achieved those targets from time to time.

The meeting will stand adjourned until further call of the Chair.
[The following was submitted for the record:]

STATEMENT OF JAMES V. SMITH, VICE PRESIDENT, THE WATERWAYS JOURNAL

We are sure that the Congress was correct when it approved the Endangered Species Act several years ago. However, during the time of its implementation there is evidence that the Act has been used unnecessarily, we believe, to stop water projects and industrial and commercial expansion which are vital to the welfare of the American people.

"Endangered species" have been found at the sites of dams, channel improvement projects, ports and harbor improvements, and other projects of vital concern to the continued well-being of the American people.

We feel that the time has now come for Congress to investigate the implementation and regulation of the Endangered Species Act to see whether or not the U.S. Fish and Wildlife Service, which has authority under the Endangered Species Act, has been working with special groups such as the Sierra Club, the National Environmental Protection Fund, and other environmental organizations in an attempt to stop projects these environmental organizations do not like.

We must emphasize that these environmental organizations are indeed special interest organizations with considerable budgets and staffs in Washington who are attempting to influence Congress through lobbying. We feel, then, that these organizations should be placed on the same level as other persons who are interested in specific projects.

We would point out that the American taxpayer is losing millions of dollars because the implementation of the Endangered Species Act has stopped projects

which in some cases were nearly complete, such as the Tellico Dam in Tennessee, and we cannot believe that such action is in the best interest of the American people.

We have seen other effects of the Endangered Species Act which to us are incongruous. Such examples are:

The alligator was placed on the endangered species list even though there were many alligator farms in the south, particularly in Florida, where thousands of baby 'gators were hatched every year. Because the alligator was not allowed to be killed we understand that they were eating livestock, dogs, and cats and even ducks in zoos in the south, including New Orleans. A man who was losing pets because of the predatory alligator had a difficult time getting as permit to destroy the reptile.

Because wolves were on the endangered species list in Minnesota they were allowed to destroy livestock, even going into barns to kill and eat cows and calves. But, because of the endangered species category of these animals, farmers could not destroy them but had to call on state agencies to trap and transport the wolves out of the area.

We believe that the time has come for Congress to take a good and hard look at the Endangered Species Act to see whether or not it is actually in the best interest of the American people. We further believe that no additional funds should be allocated for the implementation of this Act until a balanced and valid program is set up by the U.S. Fish and Wildlife Service which would protect the American people from abuse by those persons who are more concerned about nature than their own species, homosapiens.

JOINT STATEMENT OF THE NATIONAL CATTLEMEN'S ASSOCIATION; PUBLIC LANDS COUNCIL; AND NATIONAL WOOL GROWERS ASSOCIATION

(Presented by Ronald A. Michieli, Director, Government Affairs for Land and Natural Resources, NCA, and Executive Director, PLC)

Mr. Chairman, my name is Ronald A. Michieli, Director of Government Affairs for Land and Natural Resources for the National Cattlemen's Association and Executive Director of the Public Lands Council.

On behalf of the National Cattlemen's Association, the Public Lands Council and the National Woolgrowers Association, I would like to present our joint views on certain problems and concerns regarding the Endangered Species Act.

Through its 65 affiliated state cattlemen's and breed associations, the NCA represents more than 280,000 breeders, producers, and feeders across the nation. The Public Lands Council represents the Western livestock public land users and the NWGA represents 90,000 sheep and lamb producers.

In our opinion, the Endangered Species Act merits extensive review and revision. In theory, we have no argument with the goal of this Act. Certainly, we ought to be concerned about protecting certain plant and animal species which may be threatened with extinction.

However, we think it is time to come to grips with the negative impact of this Act on man. In addition to the Act's adverse effects on use of the federally-owned lands, its potential for infringing upon private property rights is frightening. If a threatened or endangered species has a critical habitat on private land, the private landowner could be prevented from enjoying his constitutional right to full use of his land.

As presently written, the Act does not provide a method for integrating its mandates with the goals of other laws and with national goals for optimum food, fiber and energy growth. There is no means of striking a reasonable balance. Rather, implementation is plunging ahead without adequate consideration for anything other than a single-minded purpose to preserve species, including those for which there are little or no sound scientific data on which to conclude they are "endangered."

There are no provisions for the evaluation of the cost-effectiveness of species preservation programs. No assessment of the economic consequences of this program is made. There is no consideration of the alternative land and resources uses which might be lost if certain actions are taken under this program.

Section 7 of the Act is incredibly far-reaching. It means that no matter what the Federal government does, first consideration must be given to the preservation of endangered and threatened species. All federal agencies are required to evaluate their actions in terms of the Act.

Section 7 of the Act is misnamed. It does not provide for "Interagency cooperation." That so-called "cooperation" is one-way. It says that all other federal goals and programs will be subordinate to the purposes of the Endangered Species Act. All other federal departments and agencies must "utilize their authorities" to preserve designated species. They can do nothing that might infringe on a designated species or habitat. The Endangered Species program comes first and foremost. The Secretary need not cooperate with others; all others must cooperate with him in assuring that all federal operations are reviewed and suspended if they impact any endangered species.

The Endangered Species program truly is the super federal program which takes precedence over all others.

Enforcement of the Act's strong and uncompromising provisions does to rest solely with the federal agencies. The Act provides for citizen suits in the case of alleged violations and by authorizing the payment of a \$2,500 reward to anyone who furnishes information which leads to a finding of civil or criminal violation of the law or any regulation. Under the citizen suit provision, any person can seek to enjoin nearly anyone. Any effort by the Executive branch of government to balance conflicting needs could be obviated by legal actions.

When it is considered that this Act has the potential of listing as endangered tens—if not, hundreds—of thousands of animal and plant species, it is no exaggeration to suggest that the Act could wreak havoc and delays involving hundreds of programs. It could not only bring federal actions to a grinding halt but cause suspension of thousands of private projects. The Act extends to virtually every aspect of life in the United States. It applies not just to federal actions but to private activities such as farming, home purchases, businesses etc.

The authority in Section 7 allows the Secretary to halt activities which might even marginally affect a listed species habitat. It already is having a large impact on the management of the public lands and its potential infringement upon an individual's private property rights is practically unlimited.

If enforced to its limit, the Endangered Species Act could halt national growth and development in America.

Despite its tremendous potential impact, the Act does not adequately define many of its key terms such as "endangered," "threatened," "critical habitat." There are no objective criteria for determining whether a species is endangered. There is no systematic evaluation of assembled data. When a species is nominated for listing, little detail is provided on the habitat, population, and characteristics of the species involved. The listing is based on subjective, "best-guess" opinion of some biologists or botanists. Without objective criteria, how can anyone challenge the accuracy or validity of the designation?

In summary, the endangered Species Act recognizes only one national goal. It makes no provision for the balancing of this goal with major significant national needs which may be far more important than this single purpose.

Section 7 should be amended to provide a procedure to introduce a balanced consideration of all programs. It should be clearly stated that the Act does not supercede other land-use and multiple-use laws and that the Act's programs must be integrated in a considered and balanced manner with other laws and programs.

Public input and participation in the decision-making processes should be encouraged by providing more information and opportunities to the average citizens particularly those who are most directly affected.

Implementation of the Endangered Species Act also should be subject to environmental impact statement process in which the economic, property and human impacts can be assessed.

[Whereupon, at 11:54 a.m., the subcommittee adjourned, subject to the call of the Chair.]

ENDANGERED SPECIES OVERSIGHT

WEDNESDAY, MAY 24, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT, OF THE
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 2:10 p.m., room 1334, Longworth House Office Building, Hon. Robert L. Leggett presiding.

Present: Representatives Leggett, Dingell, and Forsythe.

Staff present: Robert Thornton, majority counsel; Michael Ingrao, minority research assistant; W. Patrick Morris, minority counsel; and Charles Bedell, minority counsel.

Mr. LEGGETT. The subcommittee will please come to order.

This afternoon the subcommittee begins a series of oversight hearings on the Endangered Species Act of 1973. The Endangered Species Act stands as the most far-reaching Federal effort to slow and prevent the destruction of hundreds of wildlife species that are facing extinction as a result of man's activities.

One of the most important elements of the 1973 act is its focus on Federal activities that might jeopardize the continued existence of listed species or the destruction of the critical habitat of these species. Section 7 of the act provides for interagency consultation and coordination to maximize the effectiveness of programs for the conservation of listed species. It requires departments and agencies to take such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered and threatened species or result in the destruction or modification of the critical habitat of these species.

There has been a considerable controversy about this section since the Sixth Circuit Court of Appeals decision last year enjoining the completion of the Tellico Dam in Tennessee on the grounds that the dam would destroy the critical habitat and jeopardize the existence of the endangered snail darter. This decision is currently under review by the U.S. Supreme Court.

In all, section 7 has been subject to judicial review in three instances. The *Tellico Dam/snail darter* case is the only instance that has resulted in the permanent injunction of a proposed project.

In the so-called *Mississippi sand hill crane* case, the fifth circuit did enjoin the construction of an interstate highway interchange that impacted on the critical habitat of the crane until the Department of Transportation could insure that the development of ad-

joining lands would not be detrimental to the continued survival of the cranes and their habitat. I understand, however, that this dispute has been resolved. The interchange will be built, but the Department of Transportation has been required to purchase habitat adjacent to the interchange in order to prevent potentially destructive development.

The central question to be resolved in these hearings is the extent to which the consultation and modification process of section 7 is working to avoid Tellico-type impasses in the future. Is the Tellico case an anomaly, or is it an example of the kind of conflict that we can expect to face in the future?

Obviously, the need for any amendment to the act depends on our evaluation of whether the existing process is flexible enough to achieve the goals of the Endangered Species Act without prohibiting important Federal activities throughout the country.

Several legislative proposals to amend the Endangered Species Act have been referred to this committee. These include bills by colleagues Duncan, Beard, Gore, Lloyd, and Lott. Many of these Members are scheduled to testify over the next 2 days.

In addition, the Senate Environment and Public Works Committee has recently reported legislation amending section 7 of the act.

The Senate bill would establish a seven member Cabinet level panel to review irresolvable conflicts between Federal projects and endangered and threatened species. This panel would be empowered to exempt Federal actions from the requirements of the Endangered Species Act if it determines:

1. There is no reasonable and prudent alternative to such action;
2. The project is of national or regional significance; and
3. The benefits of the Federal action outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat. This legislation has not yet passed the Senate.

A large number of individuals have requested to testify during these hearings. Unfortunately, it will be impossible to hear everyone today and tomorrow. We have set aside the afternoon of June 1 for further hearings and we will schedule additional days if necessary.

Are any of my colleagues here?

John Duncan is here.

John, we will be very pleased to hear from you at this point.

Your statement will be included as though you read it.

STATEMENT OF HON. JOHN J. DUNCAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE, ACCOMPANIED BY SHERRY COOK, LEGISLATIVE ASSISTANT

Mr. DUNCAN. For the record, Mr. Chairman, this young lady on my left is Sherry Cook, my legislative assistant.

Mr. DUNCAN. Mr. Chairman, and members of the subcommittee, I appreciate have the opportunity to appear here today to offer my comments and observations concerning the Endangered Species Act of 1973. I do so out of a sense of concern—concern that we are seeing this act applied to certain Federal projects in a manner that is not consistent with the intent of Congress when the act was drafted and passed into law.

Let me emphasize that I believe the Endangered Species Act is an important legislative measure. It represents an effort to bring some sense of balance to our national decisionmaking concerning the protection of our environment and our national economic growth. Unfortunately, recent events have convinced me that the act, as it has been interpreted by some courts, does not promote balanced decisionmaking. Indeed, it does not permit it. I do not believe that Congress intended for this act to afford any single-purpose interest a potential veto over virtually any federally funded or authorized project, at virtually any state of construction.

As most of you are probably aware, there is an example from my congressional district which graphically illustrates the inflexible and unreasonable manner in which the Endangered Species Act is presently being interpreted. Since 1967, the Tennessee Valley Authority has been constructing the Tellico Dam and reservoir project on the Little Tennessee River in East Tennessee.

Mr. LEGGETT. If you will suspend for a moment, please.

Ladies and gentlemen, these are all publicly paid for seats up here, so please come and sit down rather than crowd in the back of the room.

You are not entitled to ask questions, but you can enjoy the accoutrements in this fine new room we have.

Please proceed, Mr. Duncan.

Mr. DUNCAN. The Tellico project is more than 90-percent complete and more than \$107 million of the project's estimated \$116 million total cost has been invested toward realization of the project's benefits.

I would like, while I am talking, if I can, to pass around a picture of the dam as it is today and as it was left almost 2 years ago.

Please pass that to the committee.

Those benefits include a substantial amount of flood control storage space to help protect downstream communities; the production of 200 million kilowatt hours of electric energy in an average year; and the creation of a navigational channel which will open the area to commercial and industrial development.

I want to state here that I have a deep personal interest in seeing the Tellico project completed. I have followed the project since its inception and I have carefully listened to the arguments of both those who support the project and those who oppose it. And it is my conclusion that the Tellico project will significantly improve the quality of life particularly for the people in the area affected by the project.

Let me describe briefly the situation which exists in the counties which will be directly affected by the Tellico project. Industrial development has been slow, hampered by terrain that limits the availability of industrial sites and makes construction of transportation facilities very expensive. As a result, sufficient jobs have not been available for those persons seeking adequate employment opportunities, and what jobs are available have been generally low wage, offering few opportunities for advancement. Between 1950 and 1970, nearly 20,000 people left the three counties because of lack of employment opportunities, and about three-fourths of these were under 30 years of age. Thus, the area's most valuable resource—its young people—is being drained by lack of opportunity.

I am convinced that the Tellico project will help the people of this area take their rightful place in the economic mainstream of American life. Tellico will extend commercial navigation some 30 miles up the Little Tennessee River to a relatively level area which will become one of the finest industrial sites in east Tennessee. By providing industrial sites with access to river transportation as well as improved rail and highway access, TVA estimates 4,000 basic industrial jobs and 2,600 trades and services jobs will be created along the reservoir over a 25-year development period.

I might add that the people who will be most directly affected by Tellico share my belief that the project will substantially improve their opportunities for a better way of life. Shortly after the Sixth Circuit Court of Appeals issued an injunction halting completion of Tellico last year, I completed a series of town meetings in the counties immediately adjacent to the project. Almost without exception, the people speaking in favor of the project lived in those counties. I also conducted a survey by mail which showed that people living in the three counties support completion of the Tellico project by a nearly 9-to-1 margin. In addition, last year's session of the Tennessee General Assembly passed several joint resolutions calling for completion of the project, all by an overwhelming majority.

TVA, at the urging of Congress through continued appropriations, has pushed completion of the Tellico project so that its benefits could be realized as promptly as possible. The dam has been ready for closure and use since January of last year. However, on January 31, 1977, the Sixth Circuit Court of appeals ruled that TVA could not impound Tellico reservoir because this action would modify the habitat of the snail darter, a newly discovered 3-inch fish which was designated an endangered species by the Department of the Interior. This action was taken even though the fish was not discovered until the project was half completed and was not listed as an endangered species until the project was three-quarters completed. This case was appealed to the Supreme Court where argument was heard late last month. However, it may well be late this summer before a decision is handed down.

The committee should note that TVA has made a good faith effort to save the snail darter, and at the same time to complete the Tellico project for the benefit of man.

May I just shorten my statement and say that the Tennessee Valley Authority has transplanted the snail darter into the Hiwassee River and they have reproduced and are thriving.

We have had about 3,000 people engaged on the construction of this dam who have not worked since the little snail darter became so controversial. I have a picture of the snail darter.

You cannot eat it. It is not much to look at. It is a slimy color. [Indicating.]

Mr. LEGGETT. Is that the actual size?

Mr. DUNCAN. Yes. This is the actual size.

They are thriving in other areas.

We think that something should be done. I don't think that the House or the Senate, intended that one endangered species, regardless of what it might have been, should be able to stop a project already underway.

I would like as part of my testimony to enter the general statement from the Senate when the subcommittee passed their bill recently, which would create an advisory board.

I would like to include that general statement, If I may, for the record.

Mr. LEGGETT. Very well.

Mr. DUNCAN. Outside of that, I would like my entire statement put in the record.

Mr. LEGGETT. Are you speaking for your colleague, Marilyn Lloyd, too?

Mr. DUNCAN. She has joined with me in everything I have written or said. We have signed joint letters. I assume, unless I tell you within the next hour that she doesn't want me to speak for her, I assume she does.

Mr. LEGGETT. You will join with this subcommittee in getting a GAO study on the Tellico project; isn't that right?

Mr. DUNCAN. Yes, sir.

Mr. LEGGETT. As you indicated in your statement, it took GAO 7 months to come back to us and say that TVA should study the cost and benefits of the project and alternative uses of the river.

That was to produce some economic analyses.

Mr. DUNCAN. We don't think a proper study was made. In fact, I requested in my letter that they talk to me and look at my records from people, and they never said hello or goodbye to anyone on my staff or at my office.

I think it was a very bad report.

Now, there is a strong indication that the man who made the report is going to join the new regime at the TVA and it seemed to be a stacked deck before he went down.

Mr. LEGGETT. The man who wrote the report is going to join TVA?

Mr. DUNCAN. The new people, yes.

There is a strong indication he is, yes, sir.

It has been in the press that he is and is opposed to the completion of the Tellico Dam.

Mr. LEGGETT. Of course, TVA supports completion of the Tellico Dam?

Mr. DUNCAN. Yes, sir.

Mr. LEGGETT. Well, that is interesting.

I believe one of the general conclusions of the report, whether it is right or wrong, was the benefits were not calculated too accurately.

Mr. DUNCAN. No, sir.

Mr. LEGGETT. I don't know whether that is material or not.

Mr. DUNCAN. The report also suggested that the land could be taken back into farmland.

Well, actually, most of the land was in the soil bank and it wasn't being used for farming.

Again, we think that it should be finished, and I think it is a disgrace, almost a hoax on the American people, when they say that is the only place the little fish can live.

It has been proven they can be transplanted to other places.

Mr. LEGGETT. The amount for finishing that dam is what? \$10 million?

Mr. DUNCAN. About \$10 million; yes, sir.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

Thank you for your statement.

I know that this subcommittee has some serious concerns about how we resolve these conflicts.

As we look down the road, there may be a number of them. As I understand, there is another GAO study underway, not specifically with respect to Tellico, but in terms of the overall implementation of the act. With reference to possible amendments to the Endangered Species Act, we need as much factual input as we can get so that we can look into them properly.

You say that the snail darter has reproduced in its transfer point?

Mr. DUNCAN. Yes.

Mr. FORSYTHE. How long ago was it transferred?

Mr. DUNCAN. I have it in my statement.

When the bells rang I started cutting out. It is about 2 or 3 years.

They are requesting some other transfers in some other streams through the Fish and Wildlife Service.

The request has been made, but it hasn't been granted yet.

They have transferred 700 snail darters from the Little Tennessee River to the Hiwassee River, and the biologists say those fish have been doing well, and they have reproduce in three successive seasons.

Mr. FORSYTHE. Three seasons?

Mr. DUNCAN. Yes.

Mr. FORSYTHE. All right.

Thank you.

Mr. LEGGETT. Mr. Dingell.

Mr. DINGELL. Thank you, Mr. Chairman.

It is always a pleasure to see our old friend from Tennessee before the committee, and I am very happy to welcome you.

Mr. DUNCAN. Thank you.

Mr. DINGELL. He is very fine member of this body.

Mr. Chairman, I have a question.

Can you tell us whether or not TVA has in fact, consulted with the Fish and Wildlife Service on the alternative project development discussed in the GAO report?

Mr. DUNCAN. They have recently; for awhile they did not because they didn't think it was necessary because the Congress had mandated that the dam be built and continued to mandate it through appropriations through the years, and some of the things that had been suggested were not feasible but, as I understand it, the directors were back with the Fish and Wildlife people maybe a month or so ago.

Mr. DINGELL. If they had done so at an earlier time, we might have avoided some of the difficulties.

Mr. DUNCAN. I think they had.

I think all the consultation that was necessary did take place. I don't think the TVA was lax in anything they did.

Mr. DINGELL. It is nice to defend TVA but—

Mr. DUNCAN. We had extensive public hearings here before the dam was constructed. We had very, very little opposition to it.

Mr. DINGELL. I do not quarrel with you on the point you raised, excepting that I observe there are good answers to different questions.

What I really want to know is do they consult with the Fish and Wildlife Service?

You indicated they did a month or so ago.

Mr. DUNCAN. They did consult with all the Government agencies prior to the construction of the Dam.

There was no opposition prior to the construction of the dam.

What I infer is that the Fish and Wildlife people requested a few months ago that they get back together and there was some conflict.

Mr. DINGELL. It was the Fish and Wildlife Service, not TVA?

Mr. DUNCAN. I think that is correct.

They requested that 2 or 3 months ago.

Mr. LEGGETT. I think we should suspend and go answer the rollcall and then come back.

Mr. DINGELL. As I understand it TVA is exempt from the Fish and Wildlife Coordination Act and they do not have to consult with the Fish and Wildlife Service.

Maybe if we made TVA consult with Fish and Wildlife, we would not be in this situation.

Mr. LEGGETT. That assumes all the projects on which they consulted are good.

Mr. DUNCAN. I have a committee meeting.

Mr. LEGGETT. We are going to vote.

Mr. DUNCAN. Do you want me to come back?

Mr. LEGGETT. We don't need you back at this point.

Your statement will be made a part of the record.

[The following was received for the record:]

STATEMENT OF HON. JOHN J. DUNCAN, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF TENNESSEE

Mr. Chairman and Members of the Subcommittee, I appreciate having the opportunity to appear here today to offer my comments and observations concerning the Endangered Species Act of 1973. I do so out of a sense of concern—concern that we are seeing this Act applied to certain Federal projects in a manner that is not consistent with the intent of Congress when the Act was drafted and passed into law.

Let me emphasize that I believe the Endangered Species Act is an important legislative measure. It represents an effort to bring some sense of balance to our national decision-making concerning the protection of our environment and our national economic growth. Unfortunately, recent events have convinced me that the Act, as it has been interpreted by some courts, does not promote balanced decision-making. Indeed, it does not permit it. I do not believe that Congress intended for this Act to afford any single-purpose interests a potential veto over virtually any Federally funded or authorized project, at virtually any stage of construction.

As most of you are probably aware, there is an example from my Congressional district which graphically illustrates the inflexible and unreasonable manner in which the Endangered Species Act is presently being interpreted. Since 1967, the Tennessee Valley Authority has been constructing the Tellico Dam and Reservoir Project on the Little Tennessee River in East Tennessee. The Tellico Project is more than 90% complete and more than \$107 million of the project's estimated \$116 million total cost has been invested toward realization of the project's benefits.

Those benefits include a substantial amount of flood control storage space to help protect downstream communities; the production of 200 million kilowatt hours of

electric energy in an average year; and the creation of a navigational channel which will open the area to commercial and industrial development.

I want to state here that I have a deep personal interest in seeing the Tellico Project completed. I have followed the project since its inception and I have carefully listened to the arguments of both those who support the project and those who oppose it. And it is my conclusion that the Tellico Project will significantly improve the quality of life particularly for the people in the area affected by the project.

Let me describe briefly the situation which exists in the counties which will be directly affected by the Tellico Project. Industrial development has been slow, hampered by terrain that limits the availability of industrial sites and makes construction of transportation facilities very expensive. As a result, sufficient jobs have not been available for those persons seeking adequate employment opportunities, and what jobs are available have been generally low-wage, offering few opportunities for advancement. Between 1950 and 1970, nearly 20,000 people left the three counties because of lack of employment opportunities, and about three-fourths of these were under 30 years of age. Thus, the area's most valuable resource—its young people—is being drained by lack of opportunity.

I am convinced that the Tellico Project will help the people of this area take their rightful place in the economic mainstream of American life. Tellico will extend commercial navigation some 30 miles up the Little Tennessee River to a relatively level area which will become one of the finest industrial sites in East Tennessee. By providing industrial sites with access to river transportation as well as improved rail and highway access, TVA estimates 4,000 basic industrial jobs and 2,600 trades and services jobs will be created along the reservoir over a 25 year development period.

I might add that the people who will be most directly affected by Tellico share my belief that the project will substantially improve their opportunities for a better way of life. Shortly after the Sixth Circuit Court of Appeals issued an injunction halting completion of Tellico last year, I completed a series of town meetings in the counties immediately adjacent to the project. Almost without exception, the people speaking in favor of the project lived in those counties. I also conducted a survey by mail which showed that people living in the three counties support completion of the Tellico Project by a nearly 9 to 1 margin. In addition, last year's session of the Tennessee General Assembly passed several joint resolutions calling for completion of the project, all by an overwhelming majority.

TVA, at the urging of Congress through continued appropriations, has pushed completion of the Tellico Project so that its benefits could be realized as promptly as possible. The dam has been ready for closure and use since January of last year. However, on January 31, 1977, the Sixth Circuit Court of Appeals ruled that TVA could not impound Tellico Reservoir because this action would modify the habitat of the snail darter, a newly discovered three-inch fish which was designated as endangered species by the Department of the Interior. This action was taken even though the fish was not discovered until the project was half completed and was not listed as an endangered species until the project was three-quarters completed. This case was appealed to the Supreme Court where argument was heard late last month. However, it may well be late this summer before a decision is handed down.

The Committee should note that TVA has made a good faith effort to save the snail darter, and at the same time to complete the Tellico Project for the benefit of man. More than 700 snail darters have been transplanted from the Little Tennessee River to the Hiwassee River. TVA biologists inform me that those fish have been doing well and have reproduced in three successive seasons. In fact, they believe, and I have no reason to doubt their judgment, that presently there may be more snail darters in the Hiwassee River than in the Little Tennessee. They further indicate that the snail darter population in the Little Tennessee is not doing so well because the dam, which has been in place for three years, has already blocked their migration path. They are hoping to transfer more fish to other streams in the area, if they can get the necessary permits from the Endangered Species Office.

Still, it is my understanding that under the Appeals Court's interpretation of the Endangered Species Act, even a successful transplant would not affect the Court's decision to enjoin completion of the project so long as the fish's critical habitat remains the Little Tennessee River. The Court has ruled that once a determination has been made that a Federal project or a Federally funded or authorized project would adversely affect an endangered or threatened species or its critical habitat, the project must automatically give way, regardless of the importance of the project, its stage of completion, or the resulting loss of a public investment. Under this interpretation, there is no room for a balanced or reasoned decision-making. Indeed balance is not allowed.

Mr. Chairman, I do not believe such an inflexible and absolute prohibition was the intent of Congress when it passed the Endangered Species Act. We certainly need to incorporate sound conservation planning in all our programs. But the interpretation being given the Act does not permit consideration of the needs of man when weighing the needs of endangered species. The needs of endangered species always prevail.

It is for this reason that I and our colleague, the Honorable Marilyn Lloyd, have introduced a bill, H.R. 4557, which would exempt the Tellico Project from the provisions of the Endangered Species Act. We have not taken this action lightly. We are aware of the concerns of some that passage of this legislation might somehow weaken the Act. But we are convinced after weighing the factors involved that this action will allow us to help meet the social and economic needs of the people of a three-county area of East Tennessee without compromising the continued existence of the snail darter.

Before I close, I do want to make reference to the General Accounting Office's study on Tellico which was released last fall. I joined with this Committee in requesting the GAO to ascertain the actual public benefits and losses if the dam were completed. It took GAO seven months to come back to us and say that the TVA should restudy the costs and benefits of the project and the alternative uses of the river. That recommendation came despite GAO's finding that \$47 million of the \$103 million which had been invested at that time would be totally lost if the project were not completed; that the remaining \$56 million spent as of February 1977 would produce some public benefit, but not one proportionate with its costs; and that up to \$16 million in new funds would be needed to simply remove the dam and restore the area to its pre-project condition. Gentlemen, it just doesn't make sense.

Mr. Chairman, I thank you and the other Members for your time and attention to this statement. I would now like to close with one final observation. The dilemma which exists between Tellico and the Endangered Species Act will not be unique as long as the Act continues to be interpreted in this manner. Indeed, it has already had ramifications for other projects throughout the country. For this reason, I believe that a close examination by this Committee concerning the present and potential impact of the Endangered Species Act comes at a critical time as we attempt to reach decisions which accommodate man and the other life forms with which he must exist.

Thank you.

Mr. LEGGETT. We are going to vote now.

[A brief recess was taken.]

Mr. LEGGETT. The meeting will please come back to order.

Are there any further Members that want to be heard?

Mr. Lott?

Mr. Robin Beard?

Mr. Beard, you can join Trent at the table.

I am very pleased to have both of you distinguished members here.

STATEMENT OF HON. TRENT LOTT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSISSIPPI

Mr. LOTT. Thank you, Mr. Chairman, and subcommittee members.

I am glad to be back before my old committee and subcommittee.

Mr. LEGGETT. We miss you, but we know that you are doing good work on your other committee.

Mr. LOTT. I apologize for the time I will take.

I feel a great deal of emotion about this and a lot of anger.

I was a member of this committee when the endangered Species Act was first passed. I wish I had known then what I know now. I would have made an effort to prevent a lot of the problems.

I represent the Fifth Congressional District of Mississippi, the home of an endangered subspecies, the Mississippi sandhill crane. I

have a picture of it and I want you to look at it so you will appreciate the beauty of the bird. There it is. [Illustrating.]

And I say that somewhat sarcastically.

Mr. LEGGETT. Are you presenting that to the subcommittee to keep or just to look at it?

Mr. LOTT. I tried to give it away, but I cannot get anybody to take it.

We have around 40 of these birds. Of course, they are subspecies of the sandhill crane. Many of you are aware there are thousands of sandhill cranes, but these 40 in Jackson County, Miss., my home county, found their way here and they found they had such a good deal and the people loved them and looked at them and enjoyed them, and so they decided to stay.

They are indigenous to Mississippi.

Mr. LEGGETT. How long have they been there?

Mr. LOTT. As long as I have been living, even before. There are probably some historians who can tell you how long they have been there, exactly.

In my area in the Gulf Coast of Mississippi, it is an area that has been interested in conservation and wildlife and ecology, in general. We have the Gulf Islands seashore. We have a couple of areas we have asked to be designated as scenic river.

The experience we have gone through may have changed the attitude of the people in that area forever with regard to the so-called endangered species.

Let me take a moment to go into this.

For some time prior to the enactment of the Endangered Species Act, Interstate 10 was mapped for construction through the Mississippi gulf coast, and the most crucial interchange on that highway was planned in what proved to be the cranes' nesting area.

We have one of the country's largest shipyards in Jackson County, Miss. We are losing human lives as result of the traffic, but this matter was taken into the courts because there was supposed to be a sandhill crane nesting area somewhere in the area of the vital interchange.

It went before the district court in Biloxi, Miss., where the judge said that the "lanes and cranes could live together." It made sense.

If you look at the area we are talking about, the nesting areas were not close to the interchange, but someone came up with the idea that since it was in a general nesting area, there shouldn't be any commercial development because it might disturb the birds.

They appealed to the higher court. The Fifth Circuit Court of Appeals overruled the lower court and ruled this interchange could not be built unless the birds were protected.

There was a temporary halt in the construction of the interstate highway.

They also stopped the dumping of spoils, but the main point of contention is not the interchange, but they didn't want any development.

It doesn't just include the interchange area. It runs right on up the road. They don't want any development up the line.

The decision said: Until the sandhill cranes can be protected to the satisfaction of the Secretary of Interior, the interchange could not be built. so the Mississippi Senators and I embarked upon a 2-

year experience of trying to work out this problem going to the Department of Interior, then to the Department of Transportation, and back and forth.

The upshot is that those 40 birds will cost the American people probably as much as \$9 million to buy the land that is supposed to be critical habitat and try to buy the land around the interchange so it can be built.

We could not get anybody to say we will do anything about it. The Department of Transportation said Fish and Wildlife.

Fish and Wildlife said that it was the Department of Transportation.

The Department of Transportation said, "We build highways. That is Interior's problem."

Back and forth we went. Every time we got an agreement worked out, it disappeared into the woodwork and the termites ate it up again.

The agreements disappeared.

The only way we could get this resolved was to get a line item added to the transportation appropriations bill.

It has been a very difficult problem and I do not think that it has presented a solution that can be used in other cases.

Therefore, let me make some specific points of concern which I have.

Mr. LEGGETT. Was the \$9 million spent?

Mr. LOTT. You know, they have spent some money, a couple of million perhaps, to buy part of the critical habitat. They plan to buy more.

We have the map to show where they are buying.

These [indicating] are the two areas which are supposed to be critical and they are buying land there.

We are talking about 6,000 acres. At one point, it included 100,000 acres to protect the 40 birds. Each one of the birds have a few hundred acres to live happily on forever after.

It is interesting to see what area they are buying first. You are talking about \$9 million. Maybe it is a little less, maybe a little more.

Mr. LEGGETT. What has happened to the population since then?

Mr. LOTT. It is about the same.

Mr. LEGGETT. Are any of those mating pairs?

Mr. LOTT. Yes.

There have been some allegations of some additions. You got maybe four eggs. we have people counting them on a daily basis and looking after them.

They did really well before this came up because the people looked after them. These birds could be moved to other areas.

Mr. LOTT. I wish to say that I endorse Robin Beard's bill, H.R. 6838.

Mr. LEGGETT. You understand that this hearing today is not on any specific bill?

Mr. LOTT. Yes.

First, I want to urge that changes be made to allow some leeway for the completion of Federal projects, such as the Interstate 10 interchange in my district, which was already underway at the time a species is declared to be endangered.

The point of contention is how far along do they have to be. There has got to be a point beyond which the environmentalists and conservationists cannot come in and say: "Hey, wait a minute, we might have an endangered species here someday," and they start drawing lines to include these Federal projects.

Sometimes I am not sure what comes first, whether the bird or the egg.

For them to come in at the last minute, that means literally hundreds of lives are affected. We have 25,000 shipyard workers that come out of that shipyard and go right through the heart of the city.

If we had the interchange, they could connect to I-10, and there would be more safety, not to mention the impact.

Look at it. The endangered species should not come in and stop a Federal project once it is started.

The second important matter that I wish to call to the attention of my colleagues involves section 7 of the act, "Interagency Cooperation."

While this section is explicit in stating that the Secretary of Interior will consult with and assist Federal agencies in meeting their responsibilities under the act, there is no language that states that the Secretary of Interior will consult with or assist Federal agencies in meeting their responsibilities under the act; there is no language that states who will pay the price if the Secretary of Interior's recommendation involves the purchasing of lands.

This is what I got into. Transportation said we need everything we have to build highways. Interior—Fish and Wildlife—said they are causing the disturbance, and they have got to pay for it.

As a result, no one paid for it. Here we are, in Washington squabbling whether it is going to be Interior or Transportation.

When we thought we had something worked out with Interior, National Wildlife Federation came forward and said that if Interior pays for this land, we are going to file suit to stop it, so one solution was blown out of the water.

There should be some very clear delineation of who pays in this instance. I do not have any strong preferences. For me it makes sense for Interior to do it.

They are the ones who designate the species. They are the ones who are responsible for saying how this land should be administered.

They should be the ones to pay. We in Congress should provide Interior the money to do the job. It is a major problem, and there will be more like this in the future if we do not deal with this; there will be more problems like the sandhill crane problem.

I went through two Secretaries of Interior and two Secretaries of Transportation and it was not until I got to Brock Adams, who is a former Member of Congress, that I could convince him that this was an unbelievable problem that would not be resolved until he took the bit in his mouth and got the ball rolling.

It is not a solution. It is a bandaid for one little bitty problem.

Mr. LEGGETT. Is that in the course of construction?

Mr. LOTT. It has been reported by the Transportation Subcommittee. It has to go through the full committee and on to the floor on Congress.

I have one last recommendation that I want to call to the subcommittee's attention, which involves the clerical aspects of administering the act.

A person in my district bought some property to use for the construction of a housing development. His lawyer checked county records to determine that there were no encumbrances on the land, and there were none that he found.

There is no formal way of notifying the chancery clerks in Mississippi that this land might be in a critical habitat area and the person might buy that land with the intention of developing it and then finds out later, by accident, that it is a critical habitat.

If he were going to use Federal funds, he could lose the project.

I have drafted a minor amendment to the act that would provide some way for people who are about to purchase land to be advised that its use may be restricted because of its inclusion in the critical habitat of an endangered species.

It is a very simple thing, but it could save people a lot of money and embarrassment.

I would urge you to look at that at the appropriate time.

I will conclude. I am sorry that the Endangered Species Act has been reported and that these hearings were not held first so we could recommend some needed changes.

I don't see how anyone could object to the Secretary notifying the appropriate persons about the existence of this critical habitat.

Mr. LEGGETT. No, I think it is a good suggestion.

Mr. LOTT. I do not know if I could vote for the Endangered Species Act without some changes.

Relizing that is the way things are, I would like to urge this subcommittee to give us a chance to make some needed changes in an act which causes problems for human beings.

We want to save birds and fish and all these other things, but there has to be some practical, responsible way to do it.

What I have gone through is nothing but a disaster. I have a hard time controlling myself because of what we have gone through.

I hope you will all take a close look at it.

Mr. LEGGETT. We will be before your committee to ask for a rule on the Endangered Species Act, and I hope you give it to us.

Mr. LOTT. Let us wait—

Mr. LEGGETT. It will be an open rule, of course.

Mr. LOTT. You make a good point.

Mr. LEGGETT. With as much time for debate as we like.

Mr. LOTT. I would be glad to answer any questions.

Mr. LEGGETT. Thank you very much.

Your statement will be made a part of the record.

[The following was received for the record:]

STATEMENT OF HON. TRENT LOTT, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF MISSISSIPPI

Mr. Chairman and distinguished Subcommittee members, it is a privilege for me to speak to you today about a law that I participated in writing when I served with some of you on the Merchant Marine & Fisheries Committee during my first congressional term. Let me say that at that point I had no idea how intimately familiar I would become with the workings of the Endangered Species Act, and it is as a result of my experiences with its implementation that I am here today.

I represent the Fifth Congressional District of Mississippi, the home of an endangered subspecies, the Mississippi sandhill crane. It is the blessing of my District that these birds love the area so much that they are not found and cannot survive, I am informed, anywhere else.

Unfortunately, for some time prior to the enactment of the Endangered Species Act, Interstate 10 was mapped for construction through the Mississippi Gulf Coast, and the most crucial interchange on that highway was planned in what proved to be the cranes' nesting area.

After much deliberation in court, it was determined that, while the interchange itself would not bother the cranes to any great extent, the Secretary of Transportation, by constructing the interchange, would be encouraging commercial development, such as gas stations and motels, around the interchange, and that this development would damage the birds. With this ruling in hand, I joined Mississippi's Senators in an effort to protect the birds, while allowing for the construction of the interchange. That, Mr. Chairman, has proved to be a monumental task.

At this point let me say that it appears we have worked out a solution whereby the Department of transportation will buy 1960 acres of land around the interchange, although DOT has no clear authority to do so, and turn it over to the Department of Interior to be administered as a wildlife refuge. Since there is no clear authority in the law for the Department of Transportation to make such a formal budget request, I had to ask the House Appropriations Subcommittee on Transportation to approve \$4 million for this land. Since there are about 40 cranes left, that works out to roughly \$100,000 per bird, and, including the acreage in addition to that being bought by the Department of Transportation that has been acquired by Interior for a wildlife refuge for the cranes already, I would say each bird will have several hundred acres at his disposal.

All of this history and the considerable amount of money I hope will indicate to you the need I see for modifications in the Endangered Species Act to make it more responsive to common sense and to human needs. I know that the Merchant Marine & Fisheries Committee never meant for human concerns to take a back seat to plants and animals, and I would like to offer some specific recommendations for modifications in the Act to so reiterate the Committee's intent.

First, I want to urge that changes be made to allow some leeway for the completion of federal projects, such as the Interstate 10 interchange in my district, which are already under way at the time a species is declared to be endangered. I understand that the Senate is working on this very problem and I have joined in sponsoring Congressman Beard's H.R. 6838, which is pending before this Committee, to modify the Act with respect to such projects that are vital to meeting human needs. I strongly endorse the concept on which Congressman Beard's bill is based.

The second important matter that I wish to call to the attention of my colleagues involves Section 7 of the Act, "Interagency Cooperation." While this section is explicit in stating that the Secretary of Interior will consult with and assist federal agencies in meeting their responsibilities under the Act, there is no language that states who will pay the price if the Secretary of Interior's recommendation involves the purchasing of lands.

I see two alternatives for solving this problem—either giving the Secretary of Interior the authority to buy whatever property is involved or giving each and every federal agency the authority to buy lands for endangered species. After working with the crane situation, I think that granting authority to the Secretary of Interior is the better solution. It is the Secretary who designates the species as endangered, and it is the Secretary who determines what steps are appropriate for protection of the species. To me, giving him the authority to acquire lands where necessary is the only logical solution. (Let me interject, too, that, when I took my crane problems to the Appropriations Committee they felt that such a modification would be helpful.)

One last recommendation that I want to call to the Subcommittee's attention involves the clerical aspects of administering the Act. A person in my district bought some property to use for the construction of a housing development. His lawyer checked county records to determine that there were no encumbrances on the land, and there were none that he found. As it turns out, however, the land lay in a critical habitat area, and, if any federal funds are used in developing the land, the Secretary of Interior has to rule on whether the project will endanger the Mississippi sandhill crane. I have drafted a minor amendment to the Act that would provide some way for people who are about to purchase land to be advised that its use might be restricted because of its inclusion in the critical habitat of an endangered species.

Mr. Chairman, I appreciate your allowing me to offer my comments on the Endangered Species Act and trust that the Subcommittee will take appropriate steps to clarify certain portions of the Act.

Mr. LEGGETT. Do the Members have any questions?

Our colleague Mr. Beard, is on the Armed Services Committee, and he ought to be on the floor.

However, this is an important project in his district.

Mr. BEARD. I appreciate your accurate observation.

I only left the floor after I realized we had things under control over there.

I left and came here to be sure that we get things under control here.

I have a statement that I would like to read because sometimes when I try to summarize, it takes more time.

Mr. LEGGETT. Do as you like.

STATEMENT OF HON. ROBIN L. BEARD, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE

Mr. BEARD. Mr. Chairman it is a pleasure to appear before this subcommittee today to discuss my views concerning reauthorization of the Endangered Species Act.

My purpose in being here today is to draw the attention of the members of this subcommittee to a number of existing and potential problems stemming from the implementation of this 1973 act. I don't believe the impact of these problems have been fully appreciated.

First of all, I think it is important that we all recognize that the administration of this act is resulting in major policy conflicts that we simply did not anticipate when the act was passed. These conflicts which we are beginning to see are but the "tip of the iceberg." As a practical matter, we are fortunate to have a chance to correct the deficiencies in this law in the light of our past experiences.

Second, this committee and the Congress should be aware of land use policy conflicts caused by flaws in the structuring of this statute, and should begin to explore alternatives to rectify these shortcomings. The time to do this is now.

The Endangered Species Act passed the Congress in 1973. It was important legislation which embodied principles we cannot allow to be undermined. The principal objective of this bill was to insure that we would never again unthinkably cause the extinction of unique plant and animal life. That principle must be protected. However, as with so many pieces of legislation which after enactment are exposed to the real test of implementation, certain problems arise. One particular problem which has been brought home to me rather forcefully, is the lack of any flexibility in the current law. There appears to be no leeway whatsoever to allow valuable public projects to go forward if there is a risk that any endangered specie might be adversely affected.

The consequence of this inflexibility is that multimillion-dollar projects are forced to a "go-or-no-go" situation without regard to any other consideration. Compounding the problem is the fact that the law is not only applied to projects on the drawing board, but

also to those that are substantially underway, and even those that are virtually complete. I find the rigidity of that universal application of the law simply unreasonable.

Whenever anyone criticized the inflexibility of this act, the standard response is something like "We have a consultation process, that has settled over 4,500 disputes. Only one or two have not been settled to the satisfaction of both parties."

However, this is just not true. The enforcers of the act have been satisfied in all but one or two cases, perhaps. But, because these "consultations" are nothing but meetings in which persons who confront the act are reminded that endangered or threatened species must be protected at all costs, they are worthless from the standpoint of flexibility.

Of course, the incident which has triggered my concern was the decision by the Sixth Circuit Court of Appeals which stopped construction on the Tellico Dam project in Tennessee. Construction was halted because a new addition to the endangered species list was found to be present in the project area.

It is important to note that construction began on the Tellico project in 1967, 6 years before the Endangered Species Act became law, and 8 years before the species in question was designated as endangered. I draw your attention to this lack of flexibility which prohibits this project from going forward in spite of the fact that it is 90-percent complete, and the American taxpayer has already invested over \$125 million in the project.

A similar situation exists in my own district in Tennessee. The Tellico Dam decision, if not reversed, will certainly bring to a halt, construction on the Duck River project, which is now approaching 40-percent completion. To date, over \$60 million has been invested in this project which, if allowed to continue, will be a vital assist to the entire area. The project will reduce flooding, provide a dependable water supply, create a broad range of new recreational opportunities, and stimulate economic growth and development for the region.

Certainly, conflicts of this type are not restricted to Tennessee. The impact of the Tellico decision will be felt all across the country. Such conflicts place unnecessary strains on the Endangered Species Act, and I cannot help but think that agitation to severely revise the act will become more pronounced as this conflict arises with more frequency. It is my feeling that we should not allow this to happen, but should avoid it. We must find some reasonable accommodation as soon as possible.

Mr. Chairman, I voted in favor of passage of the Endangered Species Act, and still believe that it was a necessary and important piece of legislation. However, few members realized the full implications of this act. Neither the members who voted in favor of it, nor the majority of the members on this subcommittee at the time had any reason to suspect that this law could be used as a tool to halt major Federal projects.

This type of activity has been well documented and the potential for even further abuse seems unlimited. The magnitude of this problem was addressed by Prof. James Rainey, the preeminent ichthyologist from Cornell University. He has stated that with the assistance of four or five good biologists, he could halt any public

works project in the Southeast by exploring for new candidates for the endangered species list.

While I am not a scientist, it is apparently easy to find new "endangered species" by use of a taxonomic approach known as splitting. This amounts to looking for minute changes in various subspecies, within a particular species of plant or animal. When such variations are found, they are categorized as an entirely new subspecies which, more often than not, is eligible for Federal protection under the act. Action of this type clearly abuses the intent of the Congress in passing this law, and therefore indicates one area where corrective legislation action is warranted. From a review of the legislative history on the 1973 Endangered Species Act, it is readily apparent that this otherwise commendable hearing record is deficient in two areas: The treatment which section 7 received, and also the inclusion of Flora into the bill.

The majority of confrontations between endangered species and man today center around section 7, which calls for interagency cooperation. I might only remind you again at this time of the frequency with which public works projects, such as the ones which I have already discussed, are held in abeyance because of discovered conflicts with this act. Section 7, however, was glossed over completely by this committee in its hearings, since it was thought to be of little significance.

With regard to the inclusion of endangered flora within the protection of the act, I would like to point out first of all that it was discussed only briefly, and second, that both the Fish and Wildlife Commission and the Department of Agriculture representatives advised against it. Both believed the inclusion of flora to be inappropriate as part of this act. One witness cautioned that enactment of comprehensive legislation for protection of flora without a better understanding of the problem "would not seem to be a solid approach." These artfully phrased words of caution seem prophetic, as today we are beginning to observe the problems caused by confrontations between public works projects and plants such as varieties of ferns and louseworts.

These two issues, which have become the focal points of debate and contention in 1978 were not thought to be important enough in 1973 to merit anything more than a cursory treatment before this committee.

I think that we all can gain additional perspective on the original intent of the act in contrast to its regulatory evolution through a brief review of those issues which consumed the bulk of this committee's time and attention. Perhaps the single largest issue discussed was that of international cooperation and import restrictions on endangered species and products made from endangered species. International attitudes toward endangered species became relevant to discussions of these topics, as did themes such as licensing authority over importers, and the number and types of inspectors needed at ports of entry.

Problems associated with allowing imports of products which are made from a species of animal which is not protected, but is virtually identical to another species which is protected also received careful consideration by the committee. There was a great deal of concern that unless "look alike" could also be included on

the endangered or threatened lists that port inspectors in some instances would not be able to determine whether violations of the law had occurred.

Adequate discussion was also given to the degree of State involvement, and the proper role of the Federal Government in assisting States in attempts to comply with the act. Standards for financial assistance to the States were also included in this portion of the hearings.

Furthermore, situations under which exemptions could be granted, and the rather detailed penalty provisions of the act received what I would consider to be careful attention. I can only conclude from all of this that today's problems simply were not foreseen at the time. They certainly were not discussed on September 18, 1973, as H.R. 39 passed the House under suspension of the rules. One Member spoke of "protecting man from himself." Another stated that present laws needed "to be made more flexible, to adapt themselves to the needs of animals themselves." Other Members called for passage, noting with alarm the dangers confronting preservation of polar bears and "spotted cats."

Mr. Chairman, I cast my vote in favor of passage of this act in order to insure that these magnificent species would receive adequate protection. However, in view of the inflexibility and the pervasive application of this law, I doubt seriously that if House Members had a chance to recast their votes today that they would give it the two-thirds necessary for passage under suspension.

Mr. LEGGETT. That is why we are going to get a rule.

Mr. BEARD. I welcome your support of my statements.

Because of these growing sentiments, again I welcome these hearings as an opportunity to review the issues and priorities. I am pleased that this subcommittee is turning its attention to the unanticipated directions which the Endangered Species Act has begun to take.

I imagine that you are going to hear a lot of testimony during these hearings from irate individuals, calling for the destruction of this act. Much of this aggravation is the product of the unintentional conflicts created in it and, so far, allowed to exist by this subcommittee.

As I have mentioned, most of these conflicts pertain to public works projects. However, they are beginning to manifest themselves within the context of national defense as well. Let me give you a few examples of these problems, to illustrate how extreme these conflicts have become.

I serve on the House Armed Services Committee. While at first glance, issues associated with my committee assignment seem far removed from protection of unique species of flora and fauna, let me assure you that these two areas are beginning to overlap all too frequently. Public lands, including military installations, have been singled out for particularly intense scrutiny to insure that endangered and threatened species exist on them receive the fullest accommodations available under law.

After surveying the individual services to determine the impact which the Endangered Species Act is having on military operations, I found a number of specific instances in which the act is hampering training and effectiveness. At this point, I would like to

submit a list of 12 instances, to be included in the record of these hearings. While this is only a partial list, it does adequately demonstrate the point.

So far, implementation of the Endangered Species Act on military installations has caused delays, increased construction and operational costs, and loss of certain areas for training purposes. And yet, I believe that we have seen only the very beginning of conflicts between this act and military operations. In his environmental message of May 23, 1977, President Carter ordered the Interior Department to survey and identify critical habitat on Federal lands. Then, under a new "memorandum of understanding" between the Departments of Defense and Interior, recommendations for management of critical habitat will be submitted to the Secretary of Defense, according to a timetable which extends from January 1979 to January 1980. A list consisting of this memorandum and other relevant materials is attached to my statement, for inclusion in the official hearing record.

In particular, I would like to call your attention to paragraph 15(c) of Department of Defense Directive No. 4156.6, dated December 22, 1976. This statement calls for the establishment of procedures to insure that military actions do not jeopardize—let me say that again—this statement calls for the establishment of procedures to insure that military actions do not jeopardize endangered or threatened species of fauna or flora or result in the destruction or modification of the critical habitat of such species.

If this directive addressed fauna alone, it would undoubtedly create tremendous hardships and loss of training effectiveness for the military, after in-depth surveys of military reservations document critical habitats.

Mr. LEGGETT. Is it your opinion that military bases would have to be closed if critical habitat were identified for endangered species?

Mr. BEARD. I don't know if they would be closed, but I will say this; as the list continues to grow, training would be so greatly hampered that efficiency and use of the base could be largely diminished.

Mr. LEGGETT. We have about 2,000 plants we are trying to list.

Mr. BEARD. Yes.

As a matter of fact, having just returned from active duty in the Marine Corps, I found 1,700 of the most effective training acres in Camp Lejeune, N.C., not being able to be used because of the red-cockaded woodpecker.

I am not saying we should not be sensitive, but I must say I find it surprising since only Federal projects are being placed on this, and in almost every Southeast military base, the red-cockaded woodpecker is on the endangered species list.

Probably this is one of the reasons President Carter stopped withdrawal of troops in Korea. The only two bases available are Camp Edwards in Massachusetts at Cape Cod and also Corry Station in Florida.

The other bases because of the environment and the endangered species, could probably not accept infantry training or combat divisions.

You raise a good point about what happens as we continue to add, and I think there are 1,800 forms of plant life waiting to join the list.

I will just conclude my statement with that.

I do not have a perfect solution, but my point is, rather than see the entire concept of this bill, the major thrust of this piece of legislation destroyed, I find it imperative that this committee and the Members of the House find a more workable solution so there is more flexibility to adapt to these problems.

However, with the possible inclusion of some 1,400 plants on the endangered and threatened lists in the near future, the conflict between national defense needs and the Endangered Species Act may reach crisis proportion. As Agriculture Department witnesses pointed out before this subcommittee in 1973, there are inherent differences between management possibilities for fauna and flora. It is inherently more difficult to make allowances to insure that plantlife is protected from tank treads and troops on maneuvers than to protect fish, birds, reptiles, or mammals.

Mr. Chairman, I think that there are important lessons that we can learn by going back and rereading the original testimony on this act. Good laws require consistency of public purpose. With regard to military installations, I think that this is fairly clear cut and easy to define. Yet, what public purpose is served when scores of communities are denied adequate water supplies, flood control, or hydroelectric power when this act is used to halt construction of dams? Why do policy conflicts arise, and what do the military-oriented examples which I have brought to your attention tell us about the conflict we are facing in other areas. I think that important indicators of the solutions are contained in those 1973 hearing reports. For instance, during House hearings on the act, Representative Potter asked an Agriculture Department official whether it would be appropriate to require that publicly owned lands be managed to protect endangered species of fish, wildlife, and flora. I concur in the answer given: "Yes, provided it were consistent with the primary purposes for which these lands were originally set aside." Unfortunately, the committee did not deem this advice important enough to make allowances for it in the reported bill. Now, 5 years later, we are beginning to face absurd situations with regard to use of public land, such as those military examples which I brought to your attention.

Again, I would like to stress the fact that the opportunity for change is upon us as we consider the reauthorization of this act. If we recognize and accept that we simply did not realize in 1973 the extent to which conflicts would be generated by this act, then we are in excellent position to take corrective action at this time. We need to take this opportunity to go back to the act and correct those portions that now allows implementation to proceed seemingly with a will of its own. We need to restate our priorities and ask the difficult questions: What costs are we willing to pay, and who decides? We also need to ask whether there is sufficient flexibility in the current act. It seems clear that a greater level of flexibility is necessary.

I do appreciate the patience of this committee to listen to my lengthy statement.

I will submit the list mentioned for the record.

Mr. LEGGETT. Without objection it will be made a part of the record.

[The following was received for the record:]

MILITARY RESERVATIONS CRITICAL HABITAT

(1) Test Station, Yuma, Arizona—protection of the Yuma clapper rail and the black clapper rail halted mosquito spraying, impacting on morale and personnel, as well as posing a possible health hazard.

(2) Fort Sill, Oklahoma—protection of eagles and substantial acreage has stopped live close air support training at the field artillery school, in addition to altering flight altitudes.

(3) Fort Benning, Georgia—Discovery of red-cockaded woodpeckers halted construction of a \$150 million barracks one year. The Forestry Service suggested relocation of the woodpeckers. They were captured by the Army, in cooperation with the Forestry Service, and transplanted to another habitat which they accepted.

(4) Fort Wyngate, Gallup, New Mexico—so far, protection of golden and bald eagle and its habitat not impacting on DARCOM operations—but this could come as expansion continues.

(5) Fort Lewis, Washington—guns cannot be fired near streams when fish are spawning, so the firing schedule has been rearranged for the past two years to accommodate this seasonal protection.

(6) Sunny Point Termina, North Carolina—Because of the presence of osprey nests, both trucks being used to dump dredging material from the terminal, and the bulldozers doing the dredging have to stay 30 feet away from the trees where the ospreys nest. During construction, live trees had to be left for the ospreys. In three years time, Sunny Point has become such a good habitat that three families of ospreys grew to 12 or 14. This, of course, requires more manpower to look after them.

(7) Fort Bragg, North Carolina—range relocated and operations constrained near habitat because of red-cockaded woodpeckers.

(8) Fort Stewart, Georgia—red-cockaded woodpeckers are restricting firing during breeding season. They are also restricting areas at Forts Gordon, Jackson, McClellan, and Rucker.

(9) Fort Polk, Louisiana—training areas and tank trails have been relocated to accommodate red-cockaded woodpeckers. The base may also have to relocate a tank gunnery range because of the birds.

(10) Fort Bliss, Texas—unconfirmed presence of grey wolves could restrain maneuvers.

(11) Camp Lejeune, North Carolina—presence of red-cockaded woodpeckers and soft-shell sea turtles have impeded combat training.

(12) Point Mugu, California—construction of a missile magazine was held up over one year because it was to be built in a "lagoon habitat" possibly harboring unidentified endangered species.

Mr. LEGGETT. You make a very good statement, Robin. Certainly the creation of critical habitat, as I understand it, some half dozen-plus years after this project was commenced, and to find ourselves with no discretion as administrators because of language in the act does require us to review this material and legislation very carefully.

You have indicated that this committee has allowed this situation to exist.

We have been conscious of it and since President Carter has addressed the matter, it will be incumbent upon this committee to reach some kind of balance.

I think your statements that this ramification was never anticipated at the time of the hearing or debate is not unusual. We are experiencing the same thing now with respect to salmon on the Pacific coast. It has been very severely restricted and we never anticipated it when we adopted the FCMA.

Sometimes the plain meaning of our words go beyond what we originally intended.

Now, what we have to do is review this to determine what we really did intend, and if we intended it, do we still intend it. Are there questions from my colleagues?

Mr. Dingell.

Mr. DINGELL. I find myself much in sympathy with the points made by my colleagues, and I want to commend them for their very helpful comments to the subcommittee.

Reading the section before us, it says:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this act, and by taking such action necessary to insure that actions authorized, funded or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary after consultation as appropriate with the affected States, to be critical.

I do not think anyone here differs with the basic thrust of that language.

Am I correct on that?

Mr. LEGGETT. It is a Catch-22.

Mr. DINGELL. If we differ with it, we have to address this problem differently.

I do not think anyone objects to the consultation process.

Mr. LOTT. First, there was very little consultation with the States.

Mr. BEARD. The consultations, the majority of which have just been phone calls, the consultations, if you ask the parties other than the Government agency enforcing it, are: "Yes, by the way, it has been brought to our attention that the lousewort or the pearly mussel is under the Endangered Species Act." This is the end of the consultation.

Mr. DINGELL. The consultation is a two-way street.

Consultation on the Department of Interior's part is something.

I am curious if there has been enough consultation on the part of the other side?

Mr. BEARD. On the other side of what?

Mr. DINGELL. The other agencies.

It is like tangoing. It takes two.

Mr. LOTT. Like Transportation and Interior.

Mr. BEARD. Like Wildlife.

Mr. DINGELL. I ask again, is there enough consultation?

Maybe there was not enough consultation and it did not occur early enough.

Mr. LOTT. There were innumerable consultations, but no solution could be worked out.

Absolute stalemate.

Mr. DINGELL. The question then is a question of land acquisition. Maybe we can address ourselves to this problem. If we modify the act to who has to pay for the cost in acquiring the land when it is necessary to protect a particular endangered species?

Mr. LOTT. That is unclear in the act.

Mr. DINGELL. I am not defending the statute, but what I am seeking to do is to determine how we can correct the situation.

Mr. LOTT. If we could say it is going to be the Interior Department or clearly say—

Mr. DINGELL. It is the Department of Transportation that is building the road.

If the Department of Transportation is really determined to complete its project it will pay all the costs, including the costs of buying the land that is affecting the sandhill crane.

Mr. LOTT. I disagree.

Presently there is no way for working out this problem.

Mr. DINGELL. We are together in addressing it.

We have a difference of who is going to pay.

Ultimately, the taxpayer will have to pay.

Mr. LOTT. States have to participate in the purchasing of land.

Mr. DINGELL. On a 95-to-5 percent ratio.

Mr. LOTT. In the case of Mississippi, we actually have a prohibition. I do not remember how the law is written, but there is some reason under the State law why the State of Mississippi could not participate in buying this land to protect endangered species.

Mr. DINGELL. Maybe the Department of Defense could do it.

Mr. LOTT. Without wetting a precedent, the line is trying to settle this problem and, at some time, we can deal with the broader problem.

Mr. DINGELL. I commend you for moving forward to resolution of the question by getting the land acquired by DOD which makes eminent good sense.

Mr. LOTT. Which they are going to transfer, with no thanks, to the Department of Interior or Transportation—save for Brock Adams.

Mr. DINGELL. I think it was a result in larger part to the efforts you made. I view that with respect.

If we can try to discuss this, our problem with regard to the land acquisition question appears to lay a mandate that this shall be a part of the project cost and not included as part of the cost-benefit ratio.

If we could move in that direction, we could dispose of your question.

Mr. LOTT. It could have been disposed of much earlier.

Mr. DINGELL. This could be a good law badly administered or a good law poorly stated.

I turn to Mr. Beard.

I get the impression what has been accomplished here is to move toward the transfer of the snail darter into new habitat areas. It would seem that would probably meet the general requirements of the statute.

Am I correct or incorrect in my appreciation?

Mr. BEARD. I think that is at a standstill.

They tried to move some of them and they ended up killing I don't know how many of them. That is not even in my district.

Let us set aside the Duck River Dam which is in my district.

My point is, I hate to get limited to one or two projects and have the whole thing be tainted by parochial interests. My whole thrust

is that of over a million and a half known species in our environment, we have got—I don't know how many on the list—very few.

We are looking at the hundreds, the thousands, that are waiting to be placed on the list.

Mr. DINGELL. I do not want to walk out of here thinking that you are being casual about wiping out animals on the endangered species list.

I think your goal is the same as mine, to protect them, but in a sensible fashion.

Mr. BEARD. Exactly.

Mr. DINGELL. If this statute is defective or is being administered in a defective fashion, maybe we ought to try to correct it in a rational way.

We want a rational piece of legislation to protect both the statute and its administration.

Mr. LEGGETT. If the gentleman will yield?

Mr. DINGELL. Certainly.

Mr. LEGGETT. The gentleman is one of the fathers of this legislation and to get your views on this matter by way of a legislative history at this point is helpful.

Mr. DINGELL. I am trying to listen to the views of the two members.

Mr. LEGGETT. You are also giving your own view, which is helpful.

We could well state that the paramount concern of the United States is national defense, and I am sure that the gentlemen at the table would agree that the paramount concern of the Nation is the defense and security of the United States of America.

Mr. DINGELL. I am certainly not going to sacrifice the preservation of the United States for a bald eagle.

Mr. LEGGETT. Yes, but you could well draw the corollary that the Department of Defense shall do everything necessary to protect the defense of the country, hell be damned all other regulations or actions of State and local governments.

We do not give that leeway to the Department of Defense, and I don't think we ought to give it to other agencies of the Government.

It should be a consultative kind of thing.

Mr. DINGELL. I am not prepared to agree with you.

I am not satisfied that the Department of Defense is properly administering the act by arbitrarily setting aside woodpecker areas.

I think our colleagues raised good questions.

Mr. BEARD. The Department of Interior is down there with full-time personnel giving direction to the military commanders on how to implement the program, and it is getting worse every year because as the woodpecker population expands because of the nice situation they have, when it gets crowded, they move to other trees and take over other acres.

Mr. DINGELL. You raised a good point, and we will inquire into that.

I commend you for bringing our attention to this.

Mr. LEGGETT. Thank you very much.

Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

Trent, you very well described the problem faced in your district when two agencies found themselves in conflict and raised the problem of how to get coordinated action on the totality of the problem.

What happened to the amount of acreage initially proposed?

I think you said they started out with 100,000 acres. Where did they wind up?

Mr. LOTT. You have got refuge and critical habitat, but the total area they originally proposed was something over 120,000 acres.

They probably got it down to something like—19,000, 17,000 acres for the 40 birds and their descendants, Mr. Forsythe.

Mr. FORSYTHE. How did that happen?

Between the two agencies? Was the public involved?

Mr. LOTT. No. This was a determination made by the Fish and Wildlife Service. I must say, though, 17,000 acres still sounds like an awful lot of acreage, to me and the people in that area, when it came down from 120,000, I got down to thinking that 17,000 was reasonable.

Mr. FORSYTHE. The way in which critical habitat is designated is another source of conflict that we should be looking at as we look at this act.

Thank you very much.

Mr. LEGGETT. We have this document submitted by Mr. Beard which will be made a part of the record.

[The following was received for the record:]

myra

December 22, 1976

NUMBER 4165.6



ASD (I&L)

Department of Defense Directive

SUBJECT: Real Property Acquisition, Management and Disposal

References: (a) DoD Directive 4165.6, "Real Property Acquisition, Management and Disposal," September 15, 1955 (hereby cancelled)
 (b) 40 United States Code 483, "Federal Property and Administrative Services Act of 1949; Sections 202(c), 203(a), (b) and (c), 401, and 402" (40 U.S.C. 484, 511 and 512)
 (c) through (zz) are listed in enclosure 1

I. REISSUANCE AND PURPOSE

This Directive reissues reference (a) to restate Department of Defense policy with respect to the acquisition, management and disposal of real property and delegates the authority necessary for the accomplishment thereof. Reference (a) is hereby superseded and cancelled.

II. DELEGATIONS

Pursuant to the authorities vested in me by Section 202(f) of the National Security Act of 1947, as amended (10 U.S.C. 133(d)) (reference (d)); Section 5 of the Reorganization Plan No. 6 of 1953 (reference (e)); and Section 202(c) of the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 483) (reference (b)); there is hereby redelegated to the Secretary of the Army, the Secretary of the Navy, and the Secretary of the Air Force, with authority to redelegate, for the purpose of administering real property actions within their respective

- b. Designations of the host responsibilities which cannot be negotiated at the military departmental level will be referred to the Assistant Secretary of Defense (Installations and Logistics) for resolution.

15. Conservation or Preservation of Environmental Values

- a. Installations of all sizes which have land or water areas capable of supporting natural resources conservation or outdoor recreation programs will develop such in accordance with DoD Directive 5500.5 (reference (ss) and 16 USC 670a through 670f (reference (tt))).
- b. Special attention should be given to properties included in, or eligible for inclusion in, the National Register of Historic Places. Such properties are afforded protection under the National Historic Preservation Act of 1966 (reference (uu)) and Executive Order 11593 (reference (vv)). Particular note must be made of Section 106 of the National Historic Preservation Act (reference (uu)) which requires that Federal, federally assisted and federally licensed undertakings affecting properties included in the National Register (whether on or off an installation) be submitted to the Advisory Council on Historic Preservation for review and comment prior to the approval of any such undertaking by the Federal Agency. Similarly the requirements of Public Law 93-291 (reference (ww)) must be complied with as it addresses the preservation of historical and archeological data which might otherwise be lost as the result of a Federal construction project or federally licensed activity or program. Procedures for the protection of historic and cultural properties have been published in 36 CFR Part 800 (reference (xx)).
- c. The Military Departments shall promulgate and enforce comprehensive regulations which establish procedures to ensure, under the requirements of the Endangered Species Act of 1973, 16 USC 1536 (reference (zz)) that actions authorized, funded, or carried out by them do not jeopardize the continued existence of endangered or threatened species of fauna and flora or result in the destruction or modification of the critical habitat of such species.

MAY 16 1978

MEMORANDUM FOR Assistant Secretary of the Army (ILAFA)
 Assistant Secretary of the Navy (NRA&I)
 Assistant Secretary of the Air Force (NRA&I)
 Commandant, U.S. Marine Corps (Attn: DCS/IA&I)

SUBJECT: Critical Habitat for Endangered and Threatened Species

Enclosed is a copy of the May 2, 1978 letter from the Acting Secretary of the Interior which transmitted the revised timetable for submission to the Department of the Interior or Department of Commerce of Critical Habitat recommendations for species occurring on lands under Department of Defense control. In essence, the identification program and timetable implement the President's May 23, 1977 Environmental Message on Critical Habitat for Endangered and Threatened Species. As may be noted, recommendations for the highest priority species are due on January 1, 1979.

It is recommended that you work directly with the appropriate Departments in the identification process and the habitat recommendation submissions. A copy of your final submissions should be furnished to this office.

for Harrington
 Perry J. Fliskas
 Deputy Assistant Secretary of Defense
 (Installations and Housing)

Enclosure



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 5 9 14 AM '78

OFFICE OF THE
SECRETARY OF DEFENSE

MAY 2 - 1978

Honorable Harold Brown
Secretary of Defense
Pentagon
Washington, D. C. 20301

Dear Mr. Secretary:

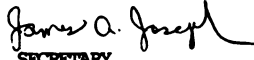
On December 9, 1977, representatives from your Department attended a workshop held by the Fish and Wildlife Service and National Marine Fisheries Service to discuss a plan for implementation of the President's Environmental Message on Critical Habitat for Endangered and Threatened species. The topics discussed at this meeting included a review of the President's directive, the biological criteria for identification of Critical Habitat, and the mechanics for each agency's participation.

With this letter I am formally transmitting to you the revised timetable for submission of Critical Habitat recommendations for species occurring on lands under your jurisdiction or control. The date of initiation of this effort has been set as January 1, 1978; therefore, recommendations for the highest priority species will be due on January 1, 1979, with subsequent recommendations for other species due on July 1, 1979, and January 1, 1980. This timetable, in my view, complies with the President's instructions that information be compiled in the shortest possible time, and yet allows a reasonable period to develop accurate information for each species.

In a few days the Director of the Fish and Wildlife Service will be sending agencies in your Department a summary of the major questions and answers discussed at the workshop. For the duration of this effort, the appropriate offices of the Fish and Wildlife Service will be continually available to your Department's agencies for whatever guidance and cooperation they may need in complying with the directive and timetable. The actual funding and carrying out of the necessary biological review is, of course, the individual responsibility of each agency. Once recommendations have been submitted, the Service will place a high priority on expediting their review and final action.

The President has made implementation of the Endangered Species Act a high environmental priority. It is an effort which will require the cooperation of each Federal land manager. I hope we can count on your support for this important endeavor. With your help, we should be able to make great strides in Endangered Species conservation in the next 2 years.

Sincerely,



Acting

SECRETARY

Enclosure

CRITICAL HABITAT PRIORITIES

The attached list presents current priorities for Critical Habitat identification and determination, as set by the Fish and Wildlife Service and National Marine Fisheries Service. It will serve as the plan for implementation of the President's directive of May 23, 1977, which called for Federal Agencies to identify potential Critical Habitats on their lands and for the Secretaries of Interior and Commerce to expedite final determinations of Critical Habitat.

The list has four parts:

- Priority Category 1 - Highest priority species with 12 month timetable
(Recommendations due January 1, 1979)
- Priority Category 2 - Medium priority species with 18 month timetable
(Recommendations due July 1, 1979)
- Priority Category 3 - Lowest priority species with 24 month timetable
(Recommendations due January 1, 1980)
- Species omitted from timetables (Critical Habitat either already determined, or now in preparation)

The following changes have been incorporated in the lists since distribution of the previous priority list at a workshop on December 9, 1977:

- 2 species accidentally omitted from the earlier list have been added
(American peregrine falcon, Category 1, and White warty-back mussel, Category 2)

Scientific names have been included for all species for clarity

Status of Critical Habitats already determined or proposed has been updated to reflect recent changes

PRIORITY CATEGORY 1 -- RECOMMENDATIONS DUE IN 12 MONTHS

Species included in this category generally are facing High Threats which substantially jeopardize their continued existence. Such species may be undergoing a precipitous, continuing population decline, or face imminent threats which will essentially destroy all or a major part of their habitat. Extinction is likely in the immediate future unless measures are taken to develop a recovery program, including determination of Critical Habitat. A few of the species included here are facing somewhat lesser threats, but have an overriding need for expedited Critical Habitat determination.

Mammals:

Ocelot	<i>Felis pardalis</i>
Jaguarundi	<i>Felis yagouaroundi cacomitli</i> & <i>F. y. tolteca</i>
Hawaiian monk seal	<i>Monachus schauinslandi</i>
Bowhead whale	<i>Balaena mysticetus</i>
Gray whale	<i>Eschrichtius gibbosus</i>
Humpback whale	<i>Megaptera novaeangliae</i>

Birds:

American peregrine falcon	<i>Falco peregrinus anatum</i>
Puerto Rican parrot	<i>Amazona vittata</i>
Puerto Rican plain pigeon	<i>Columba inornata wetmorei</i>
Hawaiian crow	<i>Corvus tropicus</i>
Kauai akialoa	<i>Hemignathus procerus</i>
Kauai nukupuu	<i>Hemignathus lucidus hanaepe</i>
Mauí nukupuu	<i>Hemignathus lucidus affinis</i>
Po'o uli	<i>Melamprosops phaeosoma</i>
Kauai oo	<i>Moho braccatus</i>
Mauí akepa	<i>Loxops coccinea ochracea</i>
Molokai creeper	<i>Loxops maculata flammea</i>
Oahu creeper,	<i>Loxops m. maculata</i>
Mauí parrotbill	<i>Pseudonestor xanthophrys</i>
San Clemente loggerhead shrike	<i>Lanius ludovicianus mearnsi</i>
Large Kauai thrush	<i>Phaeornis obscurus myadestina</i>
Molokai thrush	<i>Phaeronis obscurus rutha</i>
Small Kauai thrush	<i>Phaeronis palmeri</i>

*Accidentally omitted from previous list

Category 1 (continued)

Reptiles and Amphibians:

Hawksbill sea turtle
 Leatherback sea turtle
 Atlantic Ridley sea turtle

Eretmochelys imbricata
Dermochelys coriacea
Lepidochelys kempi

Fishes:

Big Bend gambusia
 Moapa dace

Gambusia gagei
Moapa coriacea

Maryland darter
 Shortnose sturgeon

Etheostoma sellars
Acipenser brevirostrum

Mussels:

Alabama lamp pearly mussel
 Appalachian monkey face pearly mussel
 Fine-rayed pigtoe pearly mussel
 Green-blossom pearly mussel
 Higgin's eye pearly mussel
 Pale lilliput pearly mussel
 Shiny pigtoe pearly mussel
 Tubercled-blossom pearly mussel
 Turgid blossom pearly mussel
 White cat's paw pearly mussel
 Orange-footed pimpleback
 Curtis' riffle shell

Lampsilis virescens
Quadrula sparsa
Fusconaia cuneolus
Epioblasma torulosa gubernaculum
Lampsilis higginsii
Toxolasma cylindrella
Fusconaia edgariana
Epioblasma t. torulosa
Epioblasma turgidula
Epioblasma sulcata delicata
Plethobasis cooperianus
Epioblasma florentina curtisi

Plants:

San Clemente bushmallow
 San Clemente Island larkspur
 San Clemente Indian paintbrush

Malacothamnus clementinus
Delphinium kinkiense
Castilleja grisea

PRIORITY CATEGORY 1A -- CRITICAL HABITAT
NOT FEASIBLE BECAUSE OF EXTREME RARITY

The species listed below are of extremely high threat, but they are so rare, and information on their population status and habitat needs are so lacking, that Critical Habitat determination is not feasible at this time. Should a remnant population be found at any time within the United States, an Emergency (120 day) determination of Critical Habitat may be made to rapidly alert all Federal agencies.

Species:

Northern kit fox	<i>Vulpes velox heses</i>
Florida panther	<i>Felis concolor coryi</i>
Eastern cougar	<i>Felis concolor cougar</i>
Black-footed ferret	<i>Mustela nigripes</i>
Red wolf	<i>Canis rufus</i>
Ivory-billed woodpecker	<i>Campephilus principalis</i>
Bachman's warbler	<i>Vermivora bachmanii</i>
Eskimo curlew	<i>Numenius borealis</i>
Sampson's riffle shell	<i>Epioblasma sampsoni</i>

PRIORITY CATEGORY 2 -- RECOMMENDATIONS DUE IN 18 MONTHS

Species included in this category generally are facing Medium Threats. They are undergoing steady population decline or their habitat faces substantial, but not imminent, threats. Development of recovery efforts and determination of Critical Habitat could be temporarily deferred without resulting in the extinction of the species.

Mammals:

Salt Marsh harvest mouse
Northern Rocky Mountain wolf
Sonoran pronghorn

Reithrodontomys raviventris
Canis lupus irremotus
Antilocapra americana sonoriensis

Birds:

Hawaiian dark-rumped petrel
Mexican duck
Hawaiian duck
Laysan duck
Marianas mallard
Hawaiian goose
LaPerouse's Megapode
Arctic peregrine falcon
Attwater's prairie chicken
Masked bobwhite
Light-footed clapper rail
Hawaiian gallinule
Palau ground dove
Palau owl
Puerto Rican whip-poor-will
Akiapolaau
Ou
Crested honeycreeper
Hawaii akepa
Kirtland's warbler
Tinian monarch flycatcher
Palau fantail flycatcher

Pterodroma phaeopygia sandwichensis
Anas diazi
Anas wyvilliana
Anas laysonensis
Anas oustaleti
Branta sandvicensis
Megapodius laPerouse
Falco peregrinus tundrius
Tympanuchus cupido attwateri
Colinus virginianus ridgwayi
Rallus longirostris levipes
Gallinula chloropus sandvicensis
Gallicolumba canifrons
Otus podargina
Caprimulgus noctitherus
Hemignathus wilsoni
Psittirostra psittacea
Palmeria dolei
Loxia coccinea coccinea
Dendroica kirtlandii
Monarcha takatsukasae
Rhipidura lepida

Category 2 (continued)

Ponape Mountain starling
 Reed warbler
 Ponape great white-eye

Aplonis pelzelni
Acrocephalus luscini
Rukia sanfordi

Reptiles and Amphibians:

Desert slender salamander
 Santa Cruz long-tailed salamander
 Blunt-nosed leopard lizard
 San Francisco garter snake

Batrachoseps aridus
Ambystoma macrodactylum oroceum
Crotaphytus silus
Thamnophis sirtalis tetrataenia

Fishes:

Gila trout
 Pahranagat bonytail
 Mohave chub
 Cui-ui
 Humpback chub
 Devil's Hole pupfish
 Owens River pupfish
 Watercress darter
 Fountain darter
 Okaloosa darter

Salmo gilae
Gila robusta jordoni
Gila mohavensis
Chasmistes cujus
Gila cypha
Cyprinodon diabolis
Cyprinodon radiosus
Etheostoma nuchale
Etheostoma fonticola
Etheostoma okaloosae

Mussels:

- * White warty-back pearly mussel
- Cumberland bean pearly mussel
- Dromedary pearly mussel
- Fat pocketbook pearly mussel
- Yellow-blossom pearly mussel
- Pink mucket
- Rough pigtoe

Plethobasis cicatricosus
Villosa trabilis
Dromus dromas
Pectamilus (=Proptera) capax
Epioblasma f. florentina
Lampsilis o. orbiculata
Pleurobema plenum

Plants:

San Clemente broom

Lotus scoparius ssp. *traskiae*

PRIORITY CATEGORY 3 -- RECOMMENDATIONS DUE IN 24 MONTHS

Species included in this category are facing Low Threats, in comparison with those in the two prior categories. They may be rare, or undergoing population declines which might be attributable to a short-term, possibly self-correcting fluctuation, or their habitats face threats whose deleterious effects are not conclusively established, or they are once common species which have undergone major declines but have recently stabilized at a significantly lower population level. Species in this category are generally not in immediate danger of extinction, and many are listed as Threatened rather than Endangered.

Mammals:

Hawaiian hoary bat	<i>Lasiurus cinereus semotus</i>
Delmarva fox squirrel	<i>Sciurus niger cinereus</i>
Utah prairie dog	<i>Cynomys parvidens</i>
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>
Southern sea otter	<i>Enhydra lutris nereis</i>
Dugong	<i>Dugong dugong</i>
Columbia white-tailed deer	<i>Odocoileus virginianus leucurus</i>
Key deer	<i>Odocoileus virginianus clavium</i>

Birds:

Newell's manx shearwater	<i>Puffinus puffinus newelli</i>
Eastern brown pelican	<i>Pelecanus occidentalis carolinensis</i>
California brown pelican	<i>Pelecanus occidentalis californicus</i>
Aleutian Canada goose	<i>Branta canadensis leucopareia</i>
Hawaiian hawk	<i>Buteo solitarius</i>
Bald eagle (lower 48 states)	<i>Haliaeetus l. leucocephalus</i>
Hawaiian coot	<i>Fulica americana alai</i>
California clapper rail	<i>Rallus longirostris obsoletus</i>
California least tern	<i>Sterna albifrons browni</i>
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>
Hawaiian stilt	<i>H. himantopus knudseni</i>
Red-cockaded woodpecker	<i>Dendrocoptes borealis</i>
Hawaii creeper	<i>Loxops maculata mana</i>
Nihoa millerbird	<i>Acrocephalus kingi</i>
Laysan and Nihoa finches	<i>Psittirostra cantans</i>
San Clemente sage sparrow	<i>Amphispiza belli clementae</i>

Category 3 (continued)

Reptiles and Amphibians:

Texas blind salamander
 Red Hills salamander
 Island night lizard
 Atlantic saltmarsh snake
 Puerto Rican boa
 Alligator

Typhlomolge rathbuni
Phasognathus hubrichti
Klauberina riveriana
Nerodia fasciata taeniata
Epiplatys inornatus
Alligator mississippiensis

Fishes:

Kendall Warm Springs dace
 Gila topminnow
 Greenback cutthroat trout
 Arizona trout
 Lahontan cutthroat trout
 Paiute cutthroat trout
 Bayou darter
 Pecos gambusia
 Comanche Springs pupfish
 Clear Creek gambusia

Rhinichthys osculus thermalis
Poeciliopsis occidentalis
Salmo clarki stomias
Salmo apache
Salmo clarki henshawi
Salmo clarki seleniris
Etheostoma rubrum
Gambusia nobilis
Cyprinodon elegans
Gambusia heterochir

Insects:

Bahaman swallowtail
 Schaus swallowtail

Papilio andraemon bonhottei
Papilio aristodemus ponceanus

SPECIES OMITTED FROM CRITICAL HABITAT TIMETABLE

Critical Habitat Already Determined:

Indiana bat (*Myotis sodalis*) - 24 September 1976
 Morro Bat kangaroo rat (*Dipodomys heermanni morroensis*) - 11 August 1977
 Florida manatee (*Trichechus manatus*) - 24 September 1976

California condor (*Gymnogyps californianus*) - 24 September 1976
 American peregrine falcon (partial) (*Falco peregrinus anatum*) - 11 August 1977
 Everglade kite (*Rostrhamus sociabilis plumbeus*) - 11 August 1977
 Mississippi sandhill crane (*Grus canadensis pulla*) - 8 August 1977
 Palila (*Psittirostra bairdii*) - 11 August 1977
 Dusky seaside sparrow (*Ammodramus maritima nigrescens*) - 11 August 1977
 Cape Sable sparrow (*Ammodramus maritima mirabilis*) - 11 August 1977
 Yellow-shouldered blackbird (*Agelaius xanthomus*) - 19 November 1976

American crocodile (*Crocodylus acutus*) - 24 September 1976
 Mona ground iguana (*Cyclura stejnegeri*) - 3 February 1978
 St. Croix ground lizard (*Ameiva polops*) - 3 June 1977
 Giant anole (*Anolis roosevelti*) - 21 July 1977
 Mona boa (*Epicrates m. monensis*) - 3 February 1978

Golden coqui (*Eleutherodactylus jasperii*) - 11 November 1977
 Florida Pine Barrens treefrog (*Hyla andersonii*) - 11 November 1977
 Houston toad (*Bufo houstonensis*) - 31 January 1978

Leopard darter (*Percina pantherina*) - 27 January 1978
 Snail darter (*Percina tanasi*) - 1 April 1976
 Slackwater darter (*Etheostoma boschungii*) - 9 September 1977
 Slender chub (*Hybopsis caini*) - 9 September 1977
 Spotfin chub (*Hybopsis monacha*) - 9 September 1977
 Yellowfin madtom (*Noturus flavipinnis*) - 9 September 1977
 Alabama cavefish (*Speoplatyrhinus poulsenii*) - 9 September 1977

Critical Habitat Proposed:

Eastern timber wolf (*Canis lupus lycaon*) - 9 June 1977
 Grizzly bear (*Ursus arctos horribilis*) - 5 November 1976
 Virginia big-eared bat (*Plecotus townsendii virginianus*) - 2 December 1977

Whooping crane (*Grus americana*) - 16 December 1975

#New Mexican ridge-nosed rattlesnake (*Crotalus willardi obscurus*) - 26 May 1977

#Black toad (*Bufo exsul*) - 11 March 1977

#Proposed for listing and Critical Habitat simultaneously

Critical Habitat Proposed (cont.):

- Woundfin (*Plagopterus argentissimus*) - 2 November 1977
 #Little Kern golden trout (*Salmo aguabonita whitei*) - 1 September 1977
 #Waccamaw darter (*Etheostoma perlongum*) - 30 December 1977
 #Waccamaw killifish (*Fundulus waccamensis*) - 30 December 1977
 #Waccamaw silverside (*Menidia extensa*) - 30 December 1977
 #Barrens topminnow (*Fundulus* sp.) - 30 December 1977
 #Ouschita madtom (*Noturus lachneri*) - 30 December 1977
 #Cahaba shiner (*Notropis* sp.) - 29 November 1977
 #Spring Pygmy sunfish (*Elassoma* sp.) - 29 November 1977
 #Goldline darter (*Parcina aurolineata*) - 29 November 1977
 #Pygmy sculpin (*Cottus pygmaeus*) - 29 November 1977

 Lotis blue butterfly (*Lycasides argyrognomon lotis*) - 8 February 1977
 Lange's metalmark butterfly (*Apodemia mormo langei*) - 8 February 1977
 San Bruno elfin (*Callophrys mossii bayensis*) - 8 February 1977
 Mission blue butterfly (*Icaricia icarioides missionensis*) - 8 February 1977
 Smith's blue butterfly (*Shijimiasoides enoptes smithi*) - 8 February 1977
 El Segundo blue butterfly (*Shijimiasoides battoides allyni*) - 8 February 1977

 #Antioch Dunes evening primrose (*Oenothera deltoides* ssp. *howellii*) - 8 February 1977
 #Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*) - 8 February 1977

 #California freshwater shrimp (*Syncaris pacifica*) - 12 January 1977
 #Armigerous river snail (*Io a. armigera*) - 12 January 1977
 #Rugged river snail (*Io salebrosa*) - 12 January 1977
 #Dutton's river snail (*Io armigera duttoniana*) - 12 January 1977
 #Elk River snail (*Io verrucosa lima*) - 12 January 1977
 #Geniculate river snail (*Io g. geniculata*) - 12 January 1977
 #Indiana river snail (*Goniobasis semicarinata indianensis*) - 12 January 1977
 #Jay's river snail (*Io armigera jayana*) - 12 January 1977
 #Mainstream river snail (*Leptoxis praserosa*) - 12 January 1977
 #Small geniculate river snail (*Io geniculata penguin*) - 12 January 1977
 #Spiny river snail (*Io fluviatilis*) - 12 January 1977
 #Verrucose river snail (*Io v. verrucosa*) - 12 January 1977
 #Umbilicate river snail (*Leptoxis subglobosa umbilicata*) - 12 January 1977

Critical Habitat Proposals in Preparation (Listed Species):

Gray bat
 Colorado squawfish
 Scioto madtom
 Warm Springs madtom
 Unarmored threespine stickleback
 Cumberland monkeyface pearly mussel
 Birdwing pearly mussel
 Tan riffle shell

In addition to the species listed above, Fish and Wildlife Service Regional Offices are working with Recovery Teams and other agency and private experts to develop Critical Habitat for other listed species which are considered to be high priority within the Region. Agencies involved in identifying potential Critical Habitats on their lands should coordinate such efforts with the appropriate F.W.S. Regional Office to insure that they do not duplicate work already done.

MEMORANDUM OF UNDERSTANDING
between
THE DEPARTMENT OF THE INTERIOR
and
THE DEPARTMENT OF DEFENSE
for the
CONSERVATION AND MANAGEMENT OF FISH AND WILDLIFE RESOURCES
ON MILITARY INSTALLATIONS

Whereas the Department of Defense has jurisdiction over all military installations and facilities, and therefore has been entrusted with the responsibility to restore, improve and conserve and manage the renewable natural resources thereon in the public interest;

Whereas the Department of the Interior, functioning through the United States Fish and Wildlife Service, is charged with the responsibility for the management and wise use of fish and wildlife resources throughout the United States, its territories and possessions;

Whereas Public Law 93-280, May 10, 1975, authorizes certain Federal agencies, including the Department of Defense, to detail personnel and loan equipment to the Fish and Wildlife Service of the U.S. Department of the Interior;

Whereas the Sikes Act (P. L. 86-797), Sikes Act Amendment (P. L. 90-465) and Sikes Act extension (P. L. 93-452) (16 US 670) authorize fish and wildlife conservation and rehabilitation and outdoor recreation programs on military reservations;

Whereas the Department of Defense recognizes fish and wildlife as important renewable natural resources which are found on most military installations and which must be managed properly to insure their availability for the enjoyment of future generations; it is therefore mutually agreed that:

The Department of Defense will, with assistance from the Department of the Interior, and with cooperation from the various State fish and game agencies, manage the fish and wildlife resources on military reservations.

To effect this understanding:

The Fish and Wildlife Service will, when required and as budgetary allocations permit, assist the Department of Defense, working with its Military Departments, by conducting investigations and providing technical assistance and services in fish and wildlife management on military reservations. Such services may include:

- (a) Development of a management plan for fish and wildlife on military reservations. The plan to be mutually agreed to by the military installation, the appropriate State fish and game agency and the Fish and Wildlife Service.
- (b) Conducting surveys of fish and wildlife and their habitat on military installations.
- (c) Providing technical assistance for the protection, restoration and control of fish and wildlife populations on military installations.

- (d) Providing guidance and assistance to the Department of Defense in carrying out the Marine Mammal Protection Act, the Endangered Species Act of 1973 and other Federal laws as they apply to fish and wildlife populations found on military installations.
- (e) Making available as requested the services of a Law Enforcement Officer to aid in enforcing Federal fish and game regulations.

The Department of Defense will, as budgetary allocations permit, have a fish and wildlife management plan developed for each military installation where there is suitable habitat for management and where management of fish and wildlife resources is consistent with the mission of the installation. Management practices and procedures will provide for the protection, restoration and control of all species and for harmonious interaction with other conservation goals and beneficial land uses. Hunting and fishing may be permitted on installations where sound management policies dictate and where these activities will not interfere with the mission of the installation. Fish and wildlife management and land use policies will be reviewed annually at the Service and Department level.

Implementation of Section 1 of PL 90-465 which authorizes the Secretary of Defense to carry out a program for the development of public outdoor recreation resources at military reservations will be by a separate cooperative plan mutually agreed upon by the Secretary of Defense and the Secretary of the Interior.

The management of fish and wildlife resources on military reservations requires the exchange of information between the coordinating agencies.

Representatives from the Department of Defense and the Fish and Wildlife Service will meet annually, as near as possible to the anniversary of the signing of this document, unless otherwise requested by either agency, to review progress and/or suggested revisions to this agreement.

This Memorandum of Understanding supersedes the Memorandum of Understanding between the Departments of the Interior and Defense for the conservation of fish and wildlife on military installations dated July 11, 1960.

This Memorandum of Understanding shall become effective when approved by the Secretary of the Interior and the Secretary of Defense and shall continue in force and effect until terminated by either party.

Date _____

Secretary of Defense

Secretary of the Interior

THE WHITE HOUSE
WASHINGTON

May 23, 1977

MEMORANDUM FOR

THE SECRETARY OF THE INTERIOR
THE SECRETARY OF AGRICULTURE
THE SECRETARY OF DEFENSE
THE CHAIRMAN OF THE TENNESSEE VALLEY AUTHORITY

In my Environmental Message of May 23, 1977, I made a commitment to hasten the implementation of the Endangered Species Act of 1973.

The Federal Government should provide leadership in identifying and protecting the habitat which is critical for the survival and recovery of those species which have been determined to be endangered or threatened under the Act. Federal programs should be coordinated in a way that will provide timely assistance to the Secretary of the Interior and Secretary of Commerce in determining the habitat which is critical for the survival and recovery of those endangered and threatened species.

I therefore direct that you:

(a) identify, to the extent feasible, in consultation with the Secretary of the Interior and/or the Secretary of Commerce, areas on lands under your jurisdiction or control which appear to you to be critical for the survival and recovery of species presently determined to be endangered or threatened under the Act;

(b) provide the Secretary of the Interior and/or the Secretary of Commerce with the data and information available to you concerning the areas identified by you under subparagraph (a) to assist them in determining whether or not the areas identified by you constitute critical habitat under the Act;

(c) exercise caution in the modification of any area identified by you under subparagraph (a) and consult with the Secretary of the Interior and/or the Secretary of Commerce concerning any proposed modifications until the appropriate Secretary determines whether the area constitutes the critical habitat of an endangered or threatened species under the Act;

(d) encourage States and private citizens to assist you in identifying areas on lands within your jurisdiction or control which appear to be critical for the survival and recovery of endangered and threatened species.

I also direct the Secretary of the Interior and the Secretary of Commerce to:

(a) develop timetables for implementation of this request to assure that the information is compiled within the shortest possible time;

(b) provide the necessary guidance and cooperation to assure efficient compliance; and

(c) expedite their determinations of critical habitat of endangered and threatened species under this Act.

Jimmy Carter

JAN 30 1978

**MEMORANDUM FOR Assistant Secretary of the Army (IL&FM)
Assistant Secretary of the Navy (MRA&L)
Assistant Secretary of the Air Force (MRA&I)
Commandant, U.S. Marine Corps (I&L)**

SUBJECT: Final Regulations - Endangered Species Act of 1973

Your attention is invited to Part IV of the Federal Register of January 4, 1978 (copy enclosed for ready reference) wherein the Departments of Commerce and the Interior have published the final Section 7 Regulations for Interagency Cooperation on the Endangered Species Act of 1973. These regulations had the concurrence of this office.

Special note should be made of Section 402.04 of the Regulations regarding the consultation process and in particular the responsibility of each Federal agency to review its activities or programs and to identify any such activity or program that may affect listed Endangered Species or their habitat.

SIGNED

**Perry J. Fliakas
Deputy Assistant Secretary of Defense
(Installations and Housing)**

Enclosure

federal register

WEDNESDAY, JANUARY 4, 1978

PART IV



DEPARTMENT OF COMMERCE

**National Oceanic and
Atmospheric Administration**

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

ENDANGERED SPECIES ACT OF 1973

Interagency Cooperation Regulations

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310-85]

510-12]

Title 50—Wildlife and Fisheries

AFTER IV—JOINT REGULATIONS (UNITED STATES FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR AND NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE)

Part 403—INTERAGENCY COOPERATION—ENDANGERED SPECIES ACT OF 1973

Interagency Cooperation

AGENCY: United States Fish and Wildlife Service, Department of the Interior; National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce.

ACTION: Final rulemaking.

SUMMARY: This final rulemaking establishes the procedural regulations governing interagency consultation under section 7 of the Endangered Species Act of 1973. Section 7 requires Federal agencies to consult with the United States Fish and Wildlife Service and the National Marine Fisheries Service in order to insure that actions that they authorize, fund, or carry out do not jeopardize the continued existence of an endangered or threatened species or result in the adverse modification or destruction of their critical habitat.

EFFECTIVE DATE: January 4, 1978.

FOR FURTHER INFORMATION CONTACT:

Robert Jacobson, Chief, Branch of Management Operations, Office of Endangered Species, United States Fish and Wildlife Service, Suite 1160, 1612 K Street, NW., Washington, D.C. 20240, 202-343-6887; or Robert Gorrill, Acting Endangered Species Program Manager, Division of Marine Mammals and Endangered Species, National Marine Fisheries Service, Room 406-A, Page Building No. 2, 2500 Whitehaven St. NW., Washington, D.C. 20235, 202-634-7471.

SUPPLEMENTARY INFORMATION:

BACKGROUND

The Director, U.S. Fish and Wildlife Service, U.S. Department of the Interior, and the Director of the National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, jointly issue a final rulemaking that establishes rules and procedures for interagency consultation pursuant to section 7 of the Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1543 (hereinafter cited as the Act). The final regulations established by the U.S. Fish and Wildlife Service (hereinafter cited as FWS) and the National Marine Fisheries Service (hereinafter cited as NMFS) will be located in Part 403 of Chapter IV of Title 50, Code of Federal Regulations. This final rulemaking had originally been jointly pro-

posed as separate but substantially identical rulemaking by the FWS and NMFS and would have been located in Parts 17 and 22 of Title 50, respectively. However, in order to simplify the consultation process and avoid the publication of duplicate sets of regulations, the FWS and NMFS are jointly publishing these final section 7 regulations in an entirely new Part 403 in Chapter IV of Title 50. Chapter IV of Title 50 already contains a joint set of FWS/NMFS regulations at Part 601 dealing with anadromous fish. This Chapter of Title 50 will now contain all future sets of joint regulations issued by the two Services and the heading for the Chapter has been changed accordingly. For the convenience of the reader, the original section numbers for the FWS's proposed rulemaking will be enclosed in parentheses after any citation of a new section number in Part 403.

Recognizing that all Federal agencies must cooperate to conserve and protect endangered and threatened species (hereinafter cited as listed species) and their habitat, section 7 of the Act states:

The Secretary shall review each program administered by him and within such program in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation, to be appropriate with the affected States, to be critical.

By internal memorandum of October 18, 1974, the Secretary of the Interior further defined Interior's responsibilities under § 7 and designated the FWS as the lead agency for the Act within the Department of Interior. In a joint letter to all Federal agencies on December 3, 1974, the Secretaries of Interior and Commerce pointed out the responsibilities of the agencies under section 7 and asked for their cooperation in implementing the Act. The letter of December 3 also clarified the responsibilities of the FWS and the NMFS as the lead agencies of the two Departments for the implementation of the Act.

On April 23, 1975, the Directors of the FWS and NMFS published a joint notice in the *Federal Register* (40 FR 17764-17768) describing how "critical habitat" would be determined for listed species pursuant to section 7 of the Act.

On May 20, 1975, the FWS and NMFS convened a conference for Federal agencies to discuss the Act and its implications for the activities and programs of the agencies. At this meeting, the Federal agencies requested that guidelines be developed to assist them in meeting their responsibilities under section 7.

In response to that request, the FWS and NMFS convened an Ad-Hoc

Interagency Committee of representatives from 11 Federal agencies to advise the two Services in developing the necessary guidelines.

On April 22, 1976, "Guidelines to Assist the Federal Agencies in Complying with Section 7 of the Endangered Species Act of 1973" were transmitted to all Federal agencies by the FWS and NMFS. These guidelines were an interim measure designed to furnish a broad and flexible framework within which Federal agencies could prepare internal procedures to fulfill their responsibilities under section 7. However, as stated in the guidelines, they were "a starting point for the development and promulgation of regulations" and as such, are now superseded by this final rulemaking.

At the request of the Office of Management and Budget (hereinafter OMB), copies of the guidelines were again transmitted to the Federal agencies on May 26, 1976, for a "Quality of Life" review. The Federal agencies were requested to submit comments on the guidelines by August 1, 1976. As of September 28, 1976, 46 comments had been received from Federal agencies. Although 8 comments expressed unequivocal support for the guidelines and 3 comments were opposed, the remaining 35 did not express general support or opposition, limiting themselves to comments on particular language, organization or approach. Seven of the 35 simply stated that they had no comment at that time.

The guidelines were subsequently revised by the FWS and NMFS for publication as a proposed rulemaking, incorporating many of the comments of the Federal agencies. At the request of OMB, the draft version of the proposed rulemaking was sent to the Federal agencies on November 11, 1976, for a second "Quality of Life" review, with comments due no later than December 1, 1976. As of January 8, 1977, 4 Federal agencies had commented. The draft proposed rulemaking was revised somewhat and then published in the *Federal Register* as proposed regulations on January 26, 1977 (42 FR 4938) (42 FR 4972). Interested parties were given until March 26, 1977, to comment.

At the request of OMB, the FWS met on May 15, 1977, with a number of representatives from various Federal Agencies to respond to question and objections concerning the proposed regulations. As a result of this meeting, OMB requested that the FWS consider modifications to the regulations concerning the use of counterpart regulations, aggregate consultation, the designation of "lead" agencies, and the role of outside parties in consultation. Upon consideration of the comments received on the proposed rulemaking and at the May 15, 1977, meeting at OMB, the FWS and NMFS have revised their proposed regulations as set forth in the following final rulemaking.

These regulations have been subjected to more critical review by other Fed-

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eral agencies than any other set of regulations issued by the FWS and the NMFS, and it is the position of these two Services that the vast majority of Federal agency comments have been incorporated into this final rulemaking.

SUMMARY OF COMMENTS RECEIVED ON PROPOSED REGULATIONS

A total of 66 comments were received on the proposed rulemaking of January 24, 1977. Twenty-three of the comments expressed unequivocal support for the proposal or offered no substantive comments at that time. Seven of the comments expressed opposition to the proposal while the remaining 36 comments expressed neither general support nor opposition, limiting themselves to comments on particular language, organization or approach. Thirty-one comments were received from Federal agencies or commissions, 9 comments from State or regional organizations, 7 comments from private environmental organizations, and 18 comments from private commercial enterprises.

Perhaps the issue that received the most attention and comment concerned the mandatory versus discretionary nature of the proposed regulations. Some Federal agencies and private commercial groups suggested that the use of the consultation process should be discretionary with each agency. The Council on Environmental Quality and a number of private environmental groups took the opposite position and cited two recent United States Court of Appeals decisions as the basis for their conclusions.

The case of *National Wildlife Federation v. Coleman*, 539 F. 2d 359 (8th Cir. 1976) concerned the adverse impacts on Mississippi sandhill cranes, an endangered species, which would have resulted from completion of a portion of Interstate Highway 10 in Mississippi. In enjoining completion of the project until protective modifications were made, the Court stated, "The primary responsibility for implementing section 7 is on the Secretary of the Interior. Federal agencies are required to consult and obtain the assistance of the Secretary before taking any actions which may affect endangered species or critical habitat. However, once an agency has had meaningful consultation with the Secretary of the Interior concerning actions which may affect an endangered species, the final decision of whether or not to proceed with the action lies with the agency itself. Section 7 does not give the Department of Interior a veto over the actions of other federal agencies, provided that the required consultation has occurred." *Id.* at 371.

Furthermore, one week after the publication of the January 26th proposed rulemaking, the Sixth Circuit Court of Appeals expressly affirmed the mandatory nature of consultation under section 7.

In the case of *Hill v. TVA*, 549 F. 2d 1163 (6th Cir. 1977). In enjoining the closure of Tellico Dam because of the expected destruction of the critical habitat of the small darter, an endangered fish, the Court stated, "The Secretary [of

Interior] is not empowered to veto the final actions of such agencies, even when he is convinced, after the requisite consultation has passed, that they violate the Act." *Id.* at 1176 (emphasis added).

The FWS and the NMFS consider these legal interpretations binding and persuasive and have substituted the word "shall" for the word "should" in the final rulemaking. Section 7's mandatory directive is quite clear in requiring the initiation of consultation upon a determination that an activity or program may affect a listed species or its critical habitat. Since consultation is mandatory in those situations, the FWS and NMFS contend that they cannot adequately fulfill their responsibilities under section 7 unless there is established a rational and uniform procedure for coordinating the consultation process. Anything short of a uniform, general approach would be unnecessarily inefficient and would vitally work to the disadvantage of the listed species and perhaps to the Federal agencies as well.

The FWS and NMFS recognized this problem in the preamble to the January 26th proposed rulemaking: "The proposal establishes a final procedure of consultation because the FWS and NMFS believe they cannot responsibly fulfill their obligations under section 7 unless there is a rational and uniform procedure for the provision of biological advice to agencies considering actions within the borders of section 7." (42 FR 4883, 4885).

The FWS and NMFS are authorized under the Act to issue such regulations as they deem appropriate for the conservation of listed species. The two Services believe that these procedural regulations promote the conservation of listed species by implementing a uniform general framework as the starting point for consultation. Once the mandatory consultation has taken place, however, the ultimate responsibility for determining agency action in light of section 7 still rests with the particular Federal agency that was engaged in consultation. In this fashion, a standardized consultation process is established which preserves ultimate agency administrative control over its activities or programs.

The FWS and NMFS recognize, nonetheless, that general consultation procedures under section 7 must be sufficiently flexible to accommodate the myriad of activities that are authorized, funded, or carried out by the Federal Government. For example, the statutory responsibilities and needs of an EISW grant-in-aid program are considerably different than those of a construction agency such as the Bureau of Reclamation. The need for counterpart regulations to deal with this problem was commented upon by numerous organizations, agencies, the Council on Environmental Quality and OMB.

In response to these suggestions, the FWS and NMFS have added a new section at § 402.04(i) which authorizes the drafting of joint counterpart regulations by Federal agencies and the FWS and

NMFS. These counterpart regulations would allow individual Federal agencies to "fine tune" the general consultation framework to reflect their particular program responsibilities and obligations.

Such counterpart regulations would have to be first published as proposed and final rulemakings with at least a 60-day period for public comment. The joint participation and approval of the FWS and NMFS would also be required on these rulemakings in order to guarantee that the efficiency of consultation and the overall degree of protection afforded listed species is not diminished as a result of an agency's counterpart regulations. Changes in the general consultation framework established by this final rulemaking must, therefore, be designed to enhance the efficiency of the consultation process, without decreasing the availability of biological information or eliminating ultimate Federal agency responsibility for compliance with section 7. As long as the general consultation framework is used as a starting point, Federal agencies can anticipate little difficulty in securing approval of the FWS and NMFS for counterpart regulations. Finalized counterpart regulations for a particular agency would supersede the regulations established by this final rulemaking.

A third modification suggested by a number of Federal agencies, a private conservation organization, and OMB concerned the need to authorize consultation on a broader scale than for each separate agency activity. Similar or identical activities that are being implemented within a given administrative unit, or in accordance with a comprehensive plan, can be expected to have similar effects upon listed species or their habitats. Thus the timber cutting practices adopted by the U.S. Forest Service as part of a conservation program for the red cockaded woodpecker could be the same from timber lease to timber lease within a given National Forest. Consultation on every single timber lease in such a situation would be repetitive and inefficient.

The FWS and NMFS have, therefore, added a new provision in § 402.04(a)(3) (§ 17.93(a)(3)) which expressly acknowledges the possibility of "aggregate" consultation. The concurrence of the FWS or NMFS on the scope of "aggregate" consultation would be required, however, in order to guarantee that it does not render biological analysis inaccurate or impossible.

A fourth common objection to the proposed rulemaking concerned the procedure for designating "lead" agencies under § 402.04(b)(2) (§ 17.93(b)(2)). When an activity or program involves more than one Federal agency, the designation of a "lead" agency for consultation may prove to be advantageous. The proposed wording of § 402.04(b)(2) (§ 17.93(b)(2)) required the concurrence of the Director of the FWS or NMFS, as appropriate, for any such designations. It was pointed out that this was more restrictive than is required for the designation

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"lead" agency under the National Environmental Policy Act. Accordingly, the FWS and NMFS deleted the concurrence requirement of 402.04(b) (2) (§ 17.93(b)). As an alternative, additional language has been added to 402.04(b) (2) (3)(b) (2) which sets out the fact that agencies should consider in naming a lead agency for section 7 litigation.

One of other comments were received concerning the need to include geographical coordinates in rules designating critical habitat. The Service acknowledges the benefit to planning which would result from incorporation of this suggestion and 402.04(a) (1) (17.94(a)) has been modified accordingly.

One of the common concerns dealt with in the retroactive application of section 7 to activities or programs that were initiated prior to the time of the issuance of the critical habitat. As proposed, 402.04 (17.93) stated that section 7 applied to all activities or programs in which Federal involvement or control exists in which it itself could jeopardize continued existence of a listed species or destroy its critical habitat. In the application of 402.04 (17.93), the FWS and NMFS stated in the preamble for the proposed rule that "Neither FWS nor NMFS intends section 7 to apply to the waste that occurs if an advanced project is completed. . . . The affected agency must decide whether the degree of completion of the project justifies an action that may be inconsistent with section 7." (402.04 (17.93)).

In the discussion in the preamble was on an analysis of the case law on activity under NEPA. It was originally believed that retroactive situations under NEPA and the Act were analogous to warrant the incorporation of NEPA case law into the section 7 regulations.

The Sixth Circuit Court of Appeals in recent case of *Hill v. TVA*, 549 F. 2d 1, supra, specifically considered this issue and rejected it. The Court concluded that the extinction of a species is too severe a consequence to warrant a substantially completed activity solely on the basis of dollars already spent. The Court noted that as in some Federal discretionary construction or involvement remained that could jeopardize the listed species or destroy its critical habitat, the degree of completion of a project was irrelevant. In light of the Sixth Circuit Court of Appeals' decision, therefore, the FWS and NMFS reject the analysis of retroactivity proposed in the preamble to the rulemaking. The preamble adopted the rationale of the Sixth Circuit.

Even comments were received from Federal, State and private entities which sought to expand the participation of side parties in the consultation process. In particular, EPA suggested that the

regulations authorize the delegation of consultation responsibilities to the States, project grantees and permit applicants. In addition, the Department of HUD and the Federal Highway Administration both recommended that grant recipients be allowed to consult in place of the responsible Federal agency.

The FWS and NMFS acknowledge that outside parties directly connected with an activity or program should be accorded a greater role during the consultation process itself. This could be especially helpful for grant-in-aid programs of the Federal Government. Nonetheless, the clear language of section 7 cannot be ignored. Section 7 sets out the endangered species responsibilities for Federal departments and agencies, not for private citizens or State agencies. Thus it is the position of the FWS and NMFS that the ultimate responsibility for section 7 compliance remains with each Federal agency and cannot be delegated by it.

The FWS and NMFS believe that a compromise solution exists for this problem. Section 402.04(d) (§ 17.93(d)) has been reworded to indicate that non-Federal representatives may be authorized by a Federal agency in approved counterpart regulations to participate in the consultation process. Although the request for consultation must come from the responsible Federal agency, the actual consultation itself could take place with a State or private grantee or permit applicant. The final biological opinion of the FWS or NMFS would be sent to the responsible Federal agency, which then must decide in light of section 7 whether to authorize or fund the activity or program under review. The use of counterpart regulations could thus provide additional flexibility for Federal agencies, while leaving ultimate responsibility for section 7 compliance intact.

In a related series of comments, three private environmental organizations suggested that requests for consultation and final biological opinions be published in the Federal Register. In addition, it was suggested that the public be provided with a 60-day opportunity for comment on activities or programs that were in need of further consultation after a threshold examination. The FWS and NMFS believe that it would be administratively too burdensome to publish consultation requests and final biological opinions in the Federal Register, since it is estimated that requests for consultation could run from between 10,000 to 20,000 per year. The biological opinions rendered as a result of consultation, however, will be made available to the public upon request.

The FWS and NMFS also feel compelled to reject the suggested opportunity for public comment for two reasons. First, the time frame for consultation is long enough as it is without additional delays in the process. Federal agencies will be reluctant to initiate consultation unless they can be assured of receiving a prompt and efficient reply.

Secondly, the success of the entire consultation process may depend in large

part upon the ability of the parties engaged in consultation to avoid antagonistic positions and unnecessary defensiveness. Consultation discussions should be limited to the expected biological impacts of an activity or program upon a listed species or its critical habitat. Political considerations or the popularity of a particular proposal are irrelevant. Federal agencies may avoid the consultation process if they are given the impression that they are going to be subjected to protracted political battles under the guise of public comment and participation.

This is not to say that individual Federal agencies in their counterpart regulations could not voluntarily include a provision for public comment on their request for consultation. Rather, it merely reflects the belief of the FWS and NMFS that the consultation process would be best served if active participation were limited to those parties with a direct involvement in the proposed activity or program.

A ninth subject for comment concerned the inclusion of nonbiological factors into the critical habitat determination criteria. Two Federal agencies and a private commercial enterprise suggested that socioeconomic or cultural factors unrelated to the biological needs of a listed species be included within the criteria set forth in 402.06 (17.94). The FWS and NMFS strongly oppose this suggestion. Critical habitat is just that—habitat which is critical to the survival and recovery of the species. The focus is entirely on the biological and ecological needs of the listed species. The consideration of various socioeconomic factors is irrelevant in determining what these biological needs are. The inclusion of socioeconomic considerations would diminish the effectiveness of conservation programs for the recovery of a listed species by distorting the estimate of its true habitat needs. Therefore, the criteria in 402.06 (17.94) are limited to biological factors alone.

A tenth suggested modification concerned an agency's commitment of resources for an activity or program while consultation was in progress. Two private environmental groups suggested that a provision be included prohibiting the irreversible or irreversible commitment of resources during consultation which would foreclose the consideration of alternatives or modifications to the identified activity or program.

The FWS and NMFS recognize the merit in this suggestion and have adopted appropriate language into 402.04(a) (3) (17.93(a)(3)). It is the position of the FWS and NMFS that Congress intended Federal agencies to consult in good faith under section 7. The ultimate goal of consultation is to identify conflicts with listed species and their habitats as early as possible in the planning process. This enables the responsible Federal agency to make any necessary modifications in the proposed activity or program which would eliminate the adverse effects upon a particular species.

The consultation process becomes a sham, however, if an agency can make

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irreversible commitments of resources during consultation which foreclose the adoption of the very alternatives being discussed. Such a commitment could easily lead to the waste of millions of dollars if the activity or program is subsequently enjoined for noncompliance with section 7. This is especially true in light of the ruling in *SWP v. TVA*, 549 F.2d 1064, supra, that even substantially completed projects are not immune from the requirements of section 7. The adopted language in § 402.04(a)(3) (§ 17.03(a)(3)) is designed to prevent this needless waste. The two Services are confident that Federal agencies will recognize that this adopted language is a logical extension of the obligation to consult in good faith.

An eleventh area of concern dealt with the 90-day time frames proposed for the consultation process. Under the proposal, a 90-day limit was established for threshold examinations. Furthermore, an additional 90-day limit was set for further consultation, pending receipt of adequate biological information. Suggested changes in these time frames ranged from 30 to 45 days.

While recognizing the need for expediting the consultation process, the FWS and NMFS nonetheless believe that these proposed modifications would provide an inadequate opportunity for reviewing the potential impacts of an activity or program. In light of the expected volume of consultation requests, the complexity of the biological issues involved and the frequent lack of available information, as a general rule a 90-day limit appears to be the shortest time frame possible. It is anticipated that many requests for consultation will be processed before the expiration of 90 days. Nonetheless, the FWS and NMFS contend that a potential maximum of 90 days must be reserved for biological analysis.

Five Federal agencies and private commercial enterprises suggested that the proposed definitions contained in § 402.02 (§ 17.03) be expanded and made more specific. The FWS and NMFS disagree as to the need for, or the wisdom of, further delineation of those definitions. Definitions concerning jeopardy and the adverse modification or destruction of critical habitat must be flexible enough to deal with every possible consultation situation. In a similar fashion, the definition of critical habitat must be broad enough to cover the habitat needs of an endless variety of species. Overly specific and narrow definitions of these concepts would ultimately operate to the disadvantage of listed species by excluding them from coverage in unique situations. The definitions presently contain adequate criteria and guidelines to be utilized by the FWS and NMFS and provide a rational basis for the two Services to implement section 7.

A thirteenth area of concern dealt with the failure of the proposed rulemaking to set forth the procedure for modifying or withdrawing existing critical habitat determinations. Two Federal agencies and a private commercial enterprise requested that this process be

made more explicit. The FWS and NMFS had assumed that it was clear that alterations of critical habitat determinations would be governed by the regulatory provisions in section 4 of the Act. In order to eliminate any confusion on this point, § 402.06 (§ 17.04) has been reworded to indicate that modifications or withdrawals of critical habitat will require proposed and final rulemaking with an opportunity for public comment.

A final subject for comment concerned the relationship between the Act and NEPA. Comments on this issue generally fell into two categories. First, it was suggested by some Federal agencies and private commercial enterprises that a separate consultation process under section 7 was unnecessary in light of the EIS review process under NEPA. Secondly, it was suggested that Environmental Impact Statements be prepared for all designations of critical habitat. The FWS and NMFS must reject both suggestions.

To begin with, it has always been the position of the FWS and NMFS that the Act and NEPA share common goals and must be implemented in a harmonious fashion. The two Services have consistently maintained that section 7 consultation should be closely linked to established procedures for interagency review of EIS's in order to avoid unnecessary paper work. Furthermore, the proposed regulations stated that where consultation has been coordinated with interagency cooperation required by other statutes such as NEPA or the Fish and Wildlife Coordination Act, the biological opinions resulting from section 7 consultation should be included within the documents required by those statutes. This approach has been specifically designed to integrate consultation into NEPA.

This does not mean, however, that procedural compliance with NEPA adequately satisfies an agency's consultation responsibilities under section 7. To begin with, there is no guarantee that every proposed activity or program that may affect a listed species will generate an Environmental Impact Statement. For probably the majority of Federal agency activities, Environmental Impact Assessments, and not Impact Statements, are prepared. Assessments are rarely circulated for interagency comment. This is clearly a situation where procedural compliance with NEPA fails to satisfy the consultation requirements under section 7.

Additional problems exist as well. It has already been noted that 90-day time frames are generally required for an adequate biological review under section 7. Yet agencies are required to circulate draft Environmental Impact Statements for only 45 days. Furthermore, the fact that a draft EIS has been sent to the FWS or NMFS does not guarantee that it will be reviewed within that agency by people with endangered species expertise. Within the Department of Interior, draft EIS's received from the Department's office of Environmental Management Project Review are routed through the FWS's branch of Environ-

mental Coordination and not the Office of Endangered Species. The latter Office is only brought into the draft EIS review process if someone else has notified in the EIS a potential conflict with listed species or their habitat. By that time, a good part of the 45-day comment period has usually expired. The identity of reviewer would thus be diminished and become more haphazard without an independent consultation process under these regulations.

Finally, consultation is only going to be effective if undertaken as early as possible in an agency's planning process. Large amounts of money and manpower are invested in draft Environmental Impact Statements. By the time a draft EIS is circulated for comment, the proposed activity or program has usually generated a considerable degree of momentum within an agency. So much momentum is generated, in fact, that an agency might resist modifying or abandoning the activity, in spite of a conflict with section 7. The optimal time for consultation, therefore, is prior to completion of a draft EIS. That is the point in the planning process where the flexibility is the greatest and the commitment of resources the least. For the foregoing reasons, the FWS and NMFS contend that consultation cannot adequately take place through the NEPA interagency review process alone.

The two Services must also reject the second suggestion that EIS's be prepared for every single critical habitat determination. Critical habitat proposals must be reviewed on a case by case basis. An Environmental Impact Assessment will first be prepared for each proposal. Based upon a review of that Assessment and comments received on the proposal, it will subsequently be decided whether an EIS is required prior to final rulemaking. The automatic preparation of impact statements under these circumstances, therefore, must be rejected as being unwarranted, infeasible and not required by NEPA.

DESCRIPTION OF FINAL RULEMAKING

The purpose of this rulemaking is to establish joint rules and procedures for interagency cooperation pursuant to section 7 of the Act. This joint rulemaking is summarized below, with citation to the original section numbers contained in the FWS proposed rulemaking in parentheses:

Section 402.01 (§ 17.01) is established by defining the following terms which are used in section 7 and in this rulemaking: "Activities and programs," "Critical habitat," "Destruction or adverse modification," "Director or Regional Director," "Federal agency," "Jeopardies the continued existence of," "Listed species," and "Recovery."

Section 402.02 (§ 17.02) sets out the scope of section 7 under the Act. This section discusses the responsibilities of the Federal agencies under section 7 to carry out conservation programs for listed species, and to insure that their activities and programs do not jeopardize the continued existence of listed species or result in the destruction or

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modification of critical habitat. The section affirms that the prohibition against causing "jeopardy" applies extrajurisdictionally.

Section 402.02 (17.02) describes the application of section 7 to previously initiated Federal agency actions.

Section 402.04 (17.05) sets forth the procedures that Federal agencies shall follow in meeting the consultation and assistance requirements of section 7.

(a) **Initiation.** (1) The prohibition shall be initiated by Federal agencies after review and identification of activities or programs that may affect listed species.

(2) If the review indicates no effect on listed species or their habitat, consultation is not required. Unless requested by the FWS or NMFS.

(3) If a Federal agency identifies any activity or program that may affect listed species or their habitat, that agency shall initiate consultation by sending a written request to the appropriate FWS or NMFS official. If foreign countries or the high seas are involved, a copy of the request and all subsequent correspondence shall be sent to the Secretary of State as well. The request may with the approval of the appropriate FWS or NMFS official, encompass a number of similar, related activities.

(4) Consultation may also be requested by either the FWS or NMFS if they should become aware of a Federal activity or program that may affect listed species and has not received the benefit of section 7 consultation.

(5) Informal consultation at the field level may be initiated, but is not a substitute for formal consultation. Federal agencies may obtain assistance from any source as long as they retain ultimate responsibility for consultation.

(b) **Form of consultation.** (1) Consultation may be coordinated with interagency view under the National Environmental Policy Act (42 U.S.C. 4321 et seq.), the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), and other appropriate statutes. However, such coordination does not relieve the Federal agencies from compliance with the consultation procedures contained in this subchapter.

(2) When several Federal agencies are involved in a common activity or program, they may, after notifying the FWS or NMFS, choose a lead agency to carry out consultation.

(c) **Assistance from the Service.** It is the responsibility of the affected Federal agencies to obtain the biological data necessary to evaluate the effect of an activity or program. The FWS or NMFS will assist with available data when requested, but are not obligated to fund the basic studies.

(4) **Distance from other sources.** A Federal agency may seek biological information from any source and may authorize non-Federal representatives to participate in consultation pursuant to approved counterpart regulations; however, the agency remains ultimately responsible for compliance with the procedures of this section.

(5) **Threshold consultation.** Upon receipt of a written request for consultation from a Federal agency, the FWS or NMFS will conduct a threshold examination. A threshold examination is a preliminary assessment to ascertain if an activity or program will adversely affect listed species or their habitat.

(1) If, in the Director's or Regional Director's opinion, the Federal activity or pro-

gram will promote the conservation of listed species or their habitat, the Federal agency will be notified within 60 days of initiation, and further consultation will not be required.

(2) If an activity or program is not specifically for the conservation of listed species and the threshold examination reveals that it is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, the Federal agency shall be notified within 60 days after initiation and further consultation will not be required.

(3) If an activity or program is not specifically for the conservation of listed species and the threshold examination reveals that it is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, the Federal agency shall be notified within 60 days after initiation and further consultation will not be required.

(4) All biological opinions issued after a threshold examination shall be accompanied by the facts and documentation on which the Service or NMFS may include recommendations for modifications to the activity or program.

(5) **Further consultation.** If the threshold examination reveals that the activity or program is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, the Federal agency will be notified within 60 days of initiation. The Federal agency then has the responsibility to gather sufficient information. The Service will issue a biological opinion and end consultation within 60 days of receipt of adequate information.

(6) **Responsibilities after consultation.** Upon receipt of the biological opinion from the FWS or NMFS, it will be the responsibility of the Federal agency to determine whether and how to proceed, in light of its section 7 obligations.

(7) **Assistance.** Consultation shall be initiated: (1) If any information reveals impacts that may hinder the survival or recovery of listed species;

(2) If the activity or program is modified in a fashion not contemplated by the consultation process;

(3) If a new species is listed that may be affected by the activity or program.

(1) **Counterpart regulations.** The procedures in Section 402.04 (17.05) may be superseded by counterpart regulations jointly drafted by individual Federal agencies and the FWS and NMFS.

Section 402.06 (17.04) sets forth the procedures for determining critical habitat, states the criteria for making such determinations, and provides for emergency determinations.

Accordingly, Chapter IV of Title 50, Code of Federal Regulations, is amended as set forth below: 1. Amend the heading of Chapter IV by deleting the present language and substituting instead the following: "Joint Regulations (United States Fish and Wildlife Service, Department of the Interior and National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce).

2. Add an Index, for new Part 402 to read as follows:

PART 402—INTERAGENCY COOPERATION—ENDANGERED SPECIES ACT OF 1973

- 402.01 Scope.
- 402.02 Definitions.
- 402.03 Applicability to previously initiated actions.
- 402.04 Consultation.
- 402.05 Determination of critical habitat.

NEW: Endangered Species Act of 1973

1. Add 1) 402.01 through 402.05 of Part 402, Chapter IV, to read as follows:

§ 402.01 Scope.

This Part interprets and implements section 7 of the Endangered Species Act of 1973 (hereinafter the Act), Section 1 (16 U.S.C. 1530) applies to all listed species of fish, wildlife, or plants and imposes three burdens upon the Federal agencies. First, it directs them to utilize their authorities to carry out conservation programs for listed species. Such affirmative conservation programs must comply with any applicable permit requirements of 50 CFR Parts 17, 220, 222 and 227 for listed species and should be fully coordinated with the appropriate Director. Second, it requires every Federal agency to insure that its activities or programs in the United States, upon the high seas, and in foreign countries will not jeopardize the continued existence of a listed species. And third, section 7 directs all Federal agencies to insure that their activities or programs do not result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service and the National Marine Fisheries Service share responsibilities for the Act. A Federal agency can determine which Service to initiate consultation with by scanning the list of species under the jurisdiction of the National Marine Fisheries Service located at 50 CFR 222.23(a) and 227.4. If the Federal agency's activity or program may affect a listed species which is cited in 50 CFR 222.23(a) or 227.4, then the agency shall initiate consultation with the National Marine Fisheries Service. If the listed species is not cited in 50 CFR 222.23(a) or 227.4, the Federal agency shall initiate consultation with the Fish and Wildlife Service.

§ 402.02 Definitions.

"Activities or programs" means all actions of any kind authorized, funded, or carried out by Federal agencies, in whole or in part, examples of which include, but are not limited to: (1) actions intended to conserve listed species or their habitat; (2) the promulgation of regulations; (3) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (4) actions directly or indirectly causing modifications to the land, water, or air.

"Critical habitat" means any air, land, or water area (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species) and con-

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stituent elements thereof, the loss of which would appreciably decrease the likelihood of the survival and recovery of a listed species or a distinct segment of its population. The constituent elements of critical habitat include, but are not limited to: physical structures and topography, biota, climate, human activity, and the quality and chemical content of land, water, and air. Critical habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion.

"Destruction or adverse modification" means a direct or indirect alteration of critical habitat, which appreciably diminishes the value of that habitat for survival and recovery of a listed species. Such alterations include, but are not limited to those diminishing the requirements for survival and recovery listed in 1402.05(b). There may be many types of activities or programs which could be carried out in critical habitat without causing such diminution.

"Director or Regional Director" means the Director or one of the Regional Directors of the United States Fish and Wildlife Service or the National Marine Fisheries Service, as appropriate, for purposes of consultation.

"Federal agency" means each authority of the Government of the United States except for the Congress, the Courts of the United States, the Governments of the Territories, Commonwealths, or possessions of the United States, or the Government of the District of Columbia.

"Jeopardize the continued existence of" means to engage in an activity or program which reasonably would be expected to reduce the reproduction, numbers, or distribution of a listed species to such an extent as to appreciably reduce the likelihood of the survival and recovery of that species in the wild. The level of reduction necessary to constitute "jeopardy" would be expected to vary among listed species.

"Listed species" means any species of fish, wildlife, or plant which is designated as endangered or threatened under the Act.

"Recovery" means improvement in the status of listed species to the point at which listing is no longer required.

§ 402.93 Applicability to previously initiated actions.

Section 7 applies to all activities or programs where Federal involvement or control remains which in itself could jeopardize the continued existence of a listed species or modify or destroy its critical habitat.

§ 402.94 Consultation.

(a) *Initiation.* (1) It is the responsibility of each Federal agency to review its activities or programs and to identify any such activity or program that may affect listed species or their habitat. Reviewing Federal agencies may obtain advice from the Service, but this is supplemental to, and not a substitute for, the formal consultation process set forth in this Part. Where a Federal agency funds or authorizes an activity or pro-

gram to be carried out by a non-Federal entity, the Federal agency shall initiate the formal consultation process and not the non-Federal entity.

(2) If a Federal agency decides that its activities or programs will not affect listed species or their habitat, consultation shall not be initiated unless requested by the Service.

(3) When a Federal agency identifies activities or programs that may affect listed species or their habitat, the agency shall convey a written request for consultation with available information to: the Regional Director for the Region where the activity or program is or will be carried out; or to the Director or Regional Director for the Region where the Federal agency is headquartered, if more than one Region is involved; or to the Director if foreign countries or the high seas are involved. In addition, if foreign countries or the high seas are involved, a copy of the request for consultation and all subsequent correspondence shall be forwarded to the Secretary of State c/o the Director, Office of Environmental Affairs. Any request for consultation may encompass, subject to the approval of the Director or Regional Director, a number of similar individual activities within a given geographical area, administrative unit, or segment of a comprehensive plan. Until consultation has been completed and a biological opinion issued, good faith consultation shall preclude a Federal agency from making an irreversible or irretrievable commitment of resources which would foreclose the consideration of modifications or alternatives to the identified activity or program.

(4) In addition, the Director or Regional Director will request initiation of consultation if he identifies any activity or program of a Federal agency that has not received prior consultation and that may affect listed species or their habitat.

(5) Informal consultation may be initiated at the field level between the Service and the Federal agencies or their authorized representatives. Such informal consultation is supplemental to, and not a substitute for, the formal consultation process set forth in this Part.

(b) *Form.* (1) Consultation under section 7 may be consolidated with inter-agency cooperation required by other statutes, such as the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) or the National Environmental Policy Act (42 U.S.C. 4321 et seq.). The satisfaction of the requirements of these other statutes, however, does not in itself relieve a Federal agency of its obligation to comply with the consultation procedures set forth in this Part.

(2) When particular programs or activities involve more than one Federal agency, these agencies may, upon notification of the Director or Regional Director, fulfill their consultation responsibilities through a single lead agency. Factors relevant in determining an appropriate lead agency include the time sequence in which the agencies become involved, the magnitude of their respective involvement and their relative ex-

pertise with respect to the environmental effects of the activity or program.

(c) *Assistance from the Service.* It is the primary responsibility of each Federal agency requesting consultation to conduct the appropriate studies and to provide the biological information necessary for an adequate review of the effect an identified activity or program has upon listed species or their habitat. To the extent it is available, the Service will upon request provide all relevant data and reports, personnel, and recommendations for additional studies or surveys, but the Service is not obligated to fund any such additional studies or surveys.

(d) *Assistance from other sources.* Federal agencies may seek assistance from any source to obtain the biological information necessary for a review of the effect an activity or program has upon listed species or their habitat. Such assistance may include, but is not limited to, that obtained by contract or required by regulations of the Federal agency. Although it may authorize a non-Federal representative to participate in the consultation process pursuant to approved counterpart regulations, the ultimate responsibility for compliance with the procedures of this section remains with the Federal agency and cannot be delegated by it.

(e) *Threshold examination.* Upon receipt of a written request for consultation, the Director or Regional Director will conduct a threshold examination of the identified activity or program. A threshold examination will include a review of available information and may include an on-site inspection of the area.

(1) If, in the opinion of the Director, an identified activity or program will promote the conservation of listed species, the appropriate Federal agency shall be notified in writing within 60 days after consultation is initiated, and additional section 7 consultation shall be unnecessary. The Service, to the extent feasible, will assist in carrying out such programs if requested by the Federal agency.

(2) If an identified activity or program is not specifically for the conservation of listed species, but the Director or Regional Director concludes from the threshold examination that the activity or program is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the appropriate Federal agency shall be notified in writing within 60 days after consultation is initiated and further section 7 consultation shall be unnecessary.

(3) If an identified activity or program is not specifically for the conservation of listed species and the Director or Regional Director concludes from the threshold examination that the activity or program is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the appropriate Federal agency shall be notified in writing within 60 days after

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consultation is initiated and further section 7 consultation shall be unnecessary.

(4) The biological opinions issued pursuant to subparagraphs (1), (2) and (3) of this section shall be accompanied by a statement of the facts and documentation on which they are based and may include recommendations for modifications in the identified activity or program which would enhance the preservation and protection of a listed species or its critical habitat. Such opinions will be released pursuant to the Freedom of Information Act.

(f) Further consultation. If the Director or Regional Director determines as a result of the threshold examination that insufficient information exists to conclude that an identified activity or program is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the Federal agency will be so notified in writing within 60 days after formal consultation is initiated. The Federal agency, with assistance as feasible from the Service and other sources of expertise, shall then obtain additional information and conduct, as appropriate, biological surveys or studies to determine how the activity or program may affect listed species or their critical habitat. Within 90 days of receipt of adequate information and documentation, unless special circumstances require negotiation of a longer period, the Service will end consultation by issuing a biological opinion pursuant to the provisions of paragraphs (e) (1), (2), (3), and (4) of this section, as appropriate.

(g) Responsibilities after consultation. Upon receipt and consideration of the biological opinion and recommendations of the Service, it is the responsibility of the Federal agency to determine whether to proceed with the activity or program as planned in light of its section 7 obligations. Where the consultation process has been consolidated with interagency cooperation required by other statutes such as the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) or the National Environmental Policy Act (42 U.S.C. 4321 et seq.), the final biological opinion and recommendations of the Service shall be stated in the documents required by those statutes.

(h) Retractions. Consultation shall be reinstated by the Service or by the Fed-

eral agency if: (1) New information reveals impacts of the identified activity or program that may affect listed species or their habitats;

(2) The identified activity or program is subsequently modified, whether as a result of a biological opinion issued after consultation or not; or

(3) A new species is listed that may be affected by the identified activity or program.

(i) Counterpart regulations. The consultation procedures set forth in this section may be superseded for a particular Federal agency by joint counterpart regulations drafted by that agency and the Fish and Wildlife Service and the National Marine Fisheries Service. Such counterpart regulations shall be published in the *Federal Register* as proposed and final rulemakings and shall provide for a minimum 90-day period for public comment.

§ 402.95 Determination of critical habitat.

(a) *Proposals.* Whenever deemed necessary and appropriate, the Director shall determine critical habitat for a listed species. After exchange of biological information, as appropriate, with the affected States and Federal agencies with jurisdiction over the lands or waters under consideration, the Director shall publish proposed and final rulemakings, accompanied by maps and/or geographical descriptions in the *Federal Register*. Comments of the scientific community and other interested persons will also be considered in promulgating final rulemakings. The modification or revocation of a critical habitat determination shall also require the publication in the *Federal Register* of a proposed and final rulemaking with an opportunity for public comment.

(b) *Criteria.* The Director will consider the physiological, behavioral, ecological, and evolutionary requirements for the survival and recovery of listed species in determining what areas or parts of habitat (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of the species) are critical. These requirements include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, or rearing of offspring; and generally,

(5) Habitats that are protected from disturbances or are representative of the geographical distribution of listed species.

(e) *Emergency determination.* Paragraphs (a) and (b) of this section notwithstanding, the Director may make an emergency determination of critical habitat if he finds that an impending action poses a significant risk to the well-being of a listed species by the destruction or adverse modification of its habitat. Emergency determinations will be published in the *Federal Register* and will remain in effect for no more than 120 days.

This final rulemaking is issued under the authority contained in the Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.) and the primary author is Donald Barry, Attorney Adviser, Solicitor's Office, Department of the Interior, 202-343-3174.

Notes.—The United States Fish and Wildlife Service and the National Marine Fisheries Service have determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11989 and OMB Circular A-107.

It was previously noted that these regulations have been submitted to over two years of review and comment by Federal agencies. During this drafting period, however, agencies were still held accountable for compliance with their section 7 obligations. The limited consultation that took place often occurred in an ad-hoc and haphazard fashion. Because of the extensive familiarity of the Federal agencies with these regulations and the need to expeditiously initiate the formal consultation process, the FWS and NMFS find that "good cause" exists within the meaning of 5 U.S.C. § 553(d) of the Administrative Procedure Act, thereby warranting that these regulations become effective immediately upon publication.

Dated: October 21, 1977.

LYNN A. GREENWALT,
Director, Fish and Wildlife Service.
JACK CHERNOGOM,
Deputy Director,
National Marine Fisheries Service.
179 Dec 78-9 Filed 1-8-79, 9:46 am]

Mr. LEGGETT. Now, we have got out distinguished colleague from New Jersey, Helen Meyner.

Mr. WATKINS. My name is Wes Watkins. I am a freshman Congressman from Oklahoma.

Mr. LEGGETT. We also have our distinguished colleague from Oklahoma here, Wes Watkins.

Mr. Beville is not yet here.

Your statement will appear in the record as though you read them, and if you want to read them you can.

Mr. DINGELL. I would like to observe that I wished to be heard, and I have a statement that may be made a part of the record as if given.

Mr. LEGGETT. So ordered.

[The following was received for the record:]

STATEMENT BY HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

As one who has for many years been intimately involved with the crafting of various legislative proposals designed to halt increasing loss of our Nation's species—in particular, the Endangered Species Act of 1973—I welcome the opportunity to express my views on the state of the art of implementing this most critical Act.

There is now—more than ever—a crucial need to provide an effective mechanism to adequately protect animal and plant species which are “endangered” by possible extinction as a result of man's transcendence of nature's natural selection process. The incursion of development projects into critically sensitive ecosystems has much too often infringed upon the last remaining habitat of a myriad of vulnerable species. As a result, Congress has determined by its overwhelming enactment of endangered species legislation—notably the 1973 Act—that absent a mechanism which protects the integrity of living species the intricate scales upon which mankind weighs the intrinsic values of “development” against “habitat” would surely be tipped in a manner inconsistent with species preservation. It is, therefore, essential that Congress continue to insure that this scale not be rigged and that the balance not be tilted by inappropriate economic and development considerations.

The specific mechanism devised in the 1973 Endangered Species Act to insure that these objectives were met has not operated perfectly—yet, it has operated with an incredible degree of effectiveness.

This oversight hearing is primarily concerned with the operational effectiveness of Section 7 of the Act. This provision requires that the Secretary of the Interior and the heads of all other Federal departments and agencies to use their authority to carry out programs for the protection of endangered species and it further requires that those agencies take the necessary actions that will not jeopardize the continuing existence of endangered species or result in the destruction of critical habitat of those species. To the extent that those actions involve the protection of habitat, the states must be consulted.

I understand that there has been major progress in promoting the maintenance and protection of nationally endangered species through cooperative “recovery teams” which involve the efforts of state conservation agencies, the U.S. Fish and Wildlife Service, and concerned citizens. We have made major progress toward implementing international endangered species protections. We have incorporated a concern for endangered species protections into a wide variety of Federal agency affairs. We have enforced the legal protections against killing or harrasing native endangered species.

One of the most important strategies of the Endangered Species Act of 1973, of course, was to achieve the conservation goal of Congress by addressing a statutory mandate directly to the Federal agencies (the creatures of Congress). The enactment of the National Environmental Policy Act in 1969—of which I was the primary architect—is a good example of this mandate. After the passage of NEPA, there were some 170 bills introduced to amend the Act—150 of which were antagonistic to the Congressional intent of NEPA. None of the bills introduced was passed due to the fact that Congress intended to allow agencies the opportunity to effectively implement the law. The Endangered Species Act should be given the same chance.

Section 7 of the Act has been successfully precisely because of the direct requirements made of the Federal agencies. I am informed that under this new law since

1973 there have been thousands of potential conflicts where agency projects might have endangered species, and hundreds of actual conflicts where a project as originally planned clearly would endanger a species—and in every case except two, the agencies were able to resolve the issue through consultation with the Fish and Wildlife Service. Project plans have been modified in design, training, location or process in order to reconcile the important policies of wildlife conservation with public project benefits.

As a matter of fact, I understand that at least so far there has *never* been a project-species conflict that could not have been resolved through interagency consultation.

The two cases we all have heard about, where the Act was enforced by the courts, reflected problems with agency compliance, not with section 7: The Mississippi sandhill crane case was brought to court by the National Wildlife Federation only when the Federal Highway Administration refused to alter plans for ongoing Interstate Highway 10 and an interchange which would destroy that crane species' only breeding habitat. Consultation broke down so the courts had to step in to enforce the law.

And the Tellico dam case, I understand was brought to court because the TVA consistently refused to discuss the various profitable project modifications that have been available since 1973, when TVA discovered the snail darter and the dam was hardly underway. The GAO study requested by this Committee demonstrates, surprisingly, that the alternative uses for this last undammed valley in Tennessee still may be far more profitable than the reservoir that would extinguish the endangered species. The Tellico has always been a regional economic development project, and it still can be so, while conserving the last remaining population of this species. That is where Tellico consultations are presently headed. Section 7, in other words, has been working well in hundreds of unheralded cases, and is working today even in the dramatic cases where court enforcement was necessary.

There are many people, of course, some of whom you are hearing from today, who are honestly and responsibly concerned about Section 7, in light of potential conflicts between some Federal projects they are interested in and the survival of an endangered species. This is understandable; in the press coverage of the endangered species issue, the existence of a species is automatically taken to mean an irreconcilable conflict. That of course is not the case.

Further, we must remember the very real public values that motivated Congress to pass this wildlife conservation law in the first place: endangered species have scientific, medical, ecological and aesthetic importance. However, species deemed by some as "insignificant" have a very direct importance as warning signals to humans—ecological barometers which relay the potential demise of entire ecosystems—like the canaries that coalminers carried into the mines to give advance warning of poisoned air for humans. The fact that a species is threatened with extinction shows that its habitat and living conditions are being threatened for human purposes as well. We may have no other scientific or legal way to recognize these values—but they are real and important for humans nevertheless and the Endangered Species Act makes them tangible.

There may indeed come a time when a project proves to be irreconcilable with the preservation of a species, and the net public importance of the project requires that the species give way. If that occurs, it is important that such a decision be approached with full review of the facts, values and alternatives involved. Such a decision cannot be made lightly, for never yet in human history has there been a conscious decision to extinguish a living species. It is a precedent not worth establishing if it is at all humanly possible.

This Subcommittee is to be congratulated for the careful consideration it had given the Act over the years, and for the careful manner in which it has processed the Tellico case, the only endangered species case that has come through the court system to Congress. The committee has requested a GAO study, a University of Tennessee study of project alternatives and has scheduled hearings that will include consideration of Tellico. This sets an important precedent for the handling of endangered species—a precedent that is necessary for the support and protection of the high principles of wildlife conservation embodied in the Act, and to prevent the tragedy of extinction, which is forever.

**STATEMENTS OF HON. HELEN MEYNER, A REPRESENTATIVE
IN CONGRESS FROM THE STATE OF NEW JERSEY; AND HON.
WES WATKINS, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF OKLAHOMA**

Ms. MEYNER. It is a pleasure to be here today to share briefly with you some of my thoughts regarding the Endangered Species Act.

I regard the Endangered Species Act as the most important wildlife legislation ever passed by this body.

The act represents a strong national commitment. I believe that it has proved to be a reasonable and effective law. It deserves to be preserved and defended.

Unfortunately, the Endangered Species Act, as well all know, has become the victim of bad press coverage. As politicians, perhaps, we should be a little sympathetic to the problems that this law has encountered.

All of us know that bad press can unjustifiably defeat that which does not deserve to be defeated.

I am here this afternoon to express my belief that the Endangered Species Act should not become the victim of circumstances that have blown the issue out of proportion.

Like those it seeks to protect, it should not become extinct.

It is my understanding that since the enactment of the law, over 4,500 cases of an endangered species conflicting with a development project have been reconciled. Unfortunately, the two or three major conflicts—most notably the small darter case—have received great public attention. The result, I am afraid, is that the benefits of the law and its past successes have been forgotten. As the sponsor of legislation to establish a center for conflict resolution to promote the teaching of conciliation methods, I can attest to the fact that the track record of the endangered species act with regard to alternatives to litigation is an outstanding one.

While I am speaking of the celebrated snail darter, and my colleague, Congressman Watkins, will be speaking about the leopard darter—isn't that the name—I would like to point out to the Tennessee delegation, and perhaps to a member of the Oklahoma delegation, that for sometime I have been fighting in my district for the deauthorization of a proposed dam, the Tocks Island Dam.

Frankly, I pray that a distant cousin of the snail darter will make its way to New Jersey, and if the gentleman would care to repropagate the snail darter in the Delaware River, my constituents and I would be most grateful.

Mr. Chairman, as a member of the International Relations Committee, I would like to express my belief that the Endangered Species Act has served an important purpose in the international arena. This law has made the United States a leader in the international conservation community. The result has been the implementation of several international treaties and conventions. An effective example is the convention on international trade in endangered species. This organization, with 38 member nations, regulates international trade in endangered and threatened plants and animals. A weakening of the act could dangerously affect our standing as the world leader in this field.

I confess that, not being a member of this committee, I do not know the intricacies of this act. I do believe that the basic structure is sound.

The fine tuning that is required by reauthorization is a task that falls on this subcommittee.

I am confident that the expertise and compassion of the members will lead to a bill that does not weaken the law or unnecessarily pay homage to the recent bad publicity that the Endangered Species Act has received.

I thank you, Mr. Chairman, and members of the committee.

Mr. LEGGETT. Thank you very much, Helen.

Let me ask you this.

Was the Tocks Island project supported by your predecessor?

Ms. MEYNER. The dam was not supported by my predecessor.

I only bring that in—

Mr. LEGGETT. Was it still constructed?

Ms. MEYNER. No; it has never been constructed, but the authorization for its construction is still pending. It still is authorized. It has not been deauthorized.

Recently there has been legislation to make it part of the Wild and Scenic Rivers System which would be a de facto deauthorization of the dam.

I only brought that up to say that maybe if we had some snail darters in the areas, it would help, or leopard darters.

Mr. WATKINS. I will bring some.

Mr. LEGGETT. The act was not intended to stop public works projects per se.

Ms. MEYNER. I know the problem with the snail darter. I was trying to introduce a little bit of levity by saying that what I need are some snail darters, and Wes is going to bring some to the Delaware, he promised, then the dam will not be built.

Mr. LEGGETT. Wes, what can you add?

Mr. WATKINS. Thank you, Mr. Chairman.

Allow me to express my appreciation to you and your distinguished colleagues for this opportunity to testify on changes I believe must be made in the Endangered Species Act of 1973.

A reservoir flood control project is definitely needed on the Glover River in southeastern Oklahoma, the district I serve. At many times, the Glover is merely a trickle, but at other times—and too many times—the river rages out of its banks and destroys cattle, farm buildings, valuable farm land, and personal property.

More importantly, it threatens lives.

Congress recognized the need for a dam on the Glover many years ago and authorized Lukfata Dam during my predecessor's time, Speaker Carl Albert.

The Corps of Engineers finally reached the point of beginning construction. Then came more delays and it appears now the dam project is dead along with other economic development possibilities in that area of southeastern Oklahoma.

One of the reasons at this point for scrubbing Lukfata is a small fish, it must be a mutation of the snail darter, or some far distant relative of the snail darter—the leopard darter—which has been listed as a threatened species.

What is actually threatened in the Lukfata Dam controversy are the people threatened by the disaster of a raging river and sufficient economic development of the area to allow people who now live in southeastern Oklahoma to continue working and living there.

Lukfata Dam would have affected only about 3 percent of the critical habitat of the leopard darter, a fish that is growing into other areas of the watershed and prospering according to biologists. That's a far cry from being threatened with extinction. And the land that would have been set aside for the dam and reservoir would have enhanced the habitat for the red-cockaded woodpecker and southern bald eagle.

I am arguing today, Mr. Chairman, that we must eliminate or at least amend the Endangered Species Act of 1973 so that we are not concerned solely with an animal, a bird or a fish to the point that we throw away our concern for human beings.

Because the leopard darter is listed as a threatened species, basically no Federal money can be spent in Oklahoma if the habitat of the darter is adversely affected—not even if the habitat of people would be enhanced.

Mr. Chairman, there must be a point where we look at the price of the trade off, where we weigh good for people against bad for a fish. People literally are being driven from their homes, not just because of a river that floods, but also because the economy of the area is depressed to the point they must go somewhere else to earn enough money to support their families.

We are saying to these people that they must go to the cities to find a job, that they must leave their rural homes in a quiet countryside for the congestion and crime of a city, of a large city.

In the case of Lukfata, the leopard darter is standing between the people and development of new jobs in an area with double-digit unemployment. Which is the greater social ill, Mr. Chairman, taking a small portion of the habitat of this fish or forcing people to leave their homes, or their habitat, to look for employment?

If Pine Creek Reservoir had not been built and in place, the Weyerhaeuser Lumber Co. would never have decided to build its huge paper mill at Valliant, Okla., because there would not have been an adequate supply of water. I am convinced the Lukfata project would have the same positive effect in McCurtain County, Okla.

We are overbalanced to the environment, Mr. Chairman, and I believe we must correct the Endangered Species Act of 1973 to allow us to make the proper evaluations with regard to human beings.

Thank you very much, Mr. Chairman.

Mr. LEGGETT. What is the cost-benefit ratio on the Lukfata?

Mr. WATKINS. One to 1.3, just enough.

Mr. LEGGETT. What was the total cost of the project?

Mr. WATKINS. About \$30 million.

I grew up in this area as a youngster, and I waded in those little pond areas and have been in areas where the water stagnated.

I have taken my family and children there and yet, in 24 hours, this whole area could be roaring completely over its banks.

These little leopard darters—I have seen them existing for many years about 30 miles from there. They have proven this fish existed in the Broken Bow Reservoir and below.

Mr. LEGGETT. You were raised in a critical habitat area and you never knew it.

Mr. WATKINS. Yes.

They are in another area and they stopped this dam.

Where do we make the trade off? Should we stop a project that can help people have jobs, raise families and give their children a choice of living and raising their families in that area of Oklahoma, instead of trying to go to a city?

We create more social ills and more problems by letting this little endangered species and 3 percent of its habitat be a major factor in stopping a needed economic project.

Mr. LEGGETT. I suspect the Public Works Committee can still authorize that project irrespective of the act using their authority which would indirectly amend the act.

Mr. WATKINS. I have personally contacted the wildlife people about this.

It was on the proposed threatened species list.

They have ignored my comments about having public hearings on whether this should be on the endangered species list or threatened species list. And I might say there is a lawsuit against this particular decision and let me say, as my colleague—

Mr. LEGGETT. A lawsuit against the designation of critical habitat?

Mr. WATKINS. Yes, the leopard darter.

It is because of some of these ridiculous rulings. I will try to say it mildly, as Congresswoman Meyner said, but I think because of some of these ridiculous rulings, we will cause lawsuit after lawsuit across the country and will probably do more harm to some of the purposes than anything else, because some of the people are just so rigid in their attitude.

Mr. LEGGETT. I think your comments are well taken.

We can destroy a good act by absurd interpretations, obviously. "Absurd," I guess, is in the eye of the beholder.

Those are the second bells.

Do you have a couple of questions, Mr. Forsythe?

Mr. FORSYTHE. I will just tank both my colleagues for being here and adding to the very important record on this.

We have go to proceed carefully so that the act is not unintentionally destroyed because we have not done things right.

Thank you very much.

Mr. LEGGETT. Thank you.

The meeting will stand in suspension until we return.

[A brief recess was taken.]

Mr. LEGGETT. The meeting will please come back to order.

Now, are there any other colleagues who want to talk?

All right, now we have the distinguished Assistant Secretary of the Interior, Robert Herbst.

Bob, very nice to have you before the subcommittee.

Mr. LEGGETT. Your statement will appear in the record as though you read it, Mr. Secretary.

STATEMENT OF HON. ROBERT L. HERBST, ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, DEPARTMENT OF THE INTERIOR, ACCOMPANIED BY AL R. JONEZ, CHIEF, OFFICE OF ENVIRONMENTAL AFFAIRS, BUREAU OF RECLAMATION; AND KEITH M. SCHREINER, ASSOCIATE DIRECTOR, FEDERAL ASSISTANCE, FISH AND WILDLIFE SERVICE; LYNN A. GREENWALT, DIRECTOR, FISH AND WILDLIFE SERVICE

Mr. HERBST. Thank you very much, Mr. Chairman.

I would like to introduce my colleagues, first, the Director of the Fish and Wildlife Service, Lynn Greenwalt, and Keith Schreiner, the Associate Director for Federal Assistance, Fish and Wildlife Service; and on my right, Al Jonez, Chief, Office of Environmental Affairs, from the Bureau of Reclamation.

We appreciate the opportunity to appear here today to participate in this oversight hearing on the Endangered Species Act.

Three months ago, Lynn Greenwalt testified before you and other members of the subcommittee on extending the appropriations authority to carry out the act. At that time we provided a detailed overview of our activities. Rather than repeating that information, I would like instead to address the current issues surrounding section 7. Appended to my prepared statement is a summary of our major activities under the act, which I would ask you to accept for the record.

Mr. LEGGETT. Without objection, so ordered.

[The following was received for the record.]

STATEMENT OF ROBERT L. HERBST, ASSISTANT SECRETARY OF THE INTERIOR FOR FISH AND WILDLIFE AND PARKS

Mr. Chairman, I appreciate the opportunity to appear here today to participate in this oversight hearing on the Endangered Species Act.

Three months ago, Lynn Greenwalt testified before you and other members of the Subcommittee on extending the appropriation's authority to carry out the Act. At that time we provided a detailed overview of our activities. Rather than repeating that information, I would like instead to address the current issues surrounding section 7. Appended to my prepared statement is a summary of our major activities under the Act.

As you know, section 7 provides for Federal interagency cooperation by directing the Secretary of the Interior to review programs administered by him and utilize such programs in protection and enhancement of endangered and threatened species. All other Federal agencies, in consultation with and with the assistance of the Secretary of the Interior, are to utilize their authorities in furtherance of the purposes of the Act. Such agencies are to insure that their actions do not jeopardize the continued existence of an endangered or threatened species or result in destruction or modification of the species critical habitat.

It is this latter requirement that has been the subject of considerable publicity and misunderstanding. Basically, there are two areas of concern. One is the listing of critical habitat and what it means. The other is Federal resource development activities and what can or cannot be done.

This Congress has seen the introduction of some 8 bills to reduce or eliminate what is perceived by some to be "irresolvable conflicts" between Federal resource development activities and section 7 of the Endangered Species Act. Some of the bills would exempt specific projects from compliance with section 7. Another approach exempts all projects initiated before listing of a species through a "grandfathering" arrangement. Legislation recently reported by the Senate Environment and Public Works Committee would establish a seven member committee to rule on exempting Federal agencies from compliance with section 7 when an "irresolvable conflict" exists. There is also a bill in the Senate which would require the Fish and Wildlife Service to prepare an environmental impact statement prior to any determination of critical habitat.

Mr. Chairman, this Administration is unalterably opposed to any substantive changes to section 7.

Creation of a committee to resolve conflicts is unnecessary. A legislative exemption from section 7 compliance for specific projects or certain classes of projects is also unnecessary. Such exemptions would, at this point in implementation of the Act, set extremely undesirable precedents. Present and future good faith consultation efforts would be undermined. We would anticipate great reluctance by development agencies to enter into meaningful consultation if there is any possibility of an exemption. Sponsors of projects which have suitable alternatives which would minimize or eliminate adverse impacts would be reluctant to implement even minor modifications if there was a possibility of achieving an exemption.

Section 7 guidelines and regulations provide adequate mechanisms to assist Federal agencies in carrying out their actions in ways which are consistent with the needs of endangered and threatened species. Federal development agencies are, to an ever increasing extent, actively seeking compliance with the Act, particularly during the planning stages and also during construction. Alternatives are usually available. The Nation's lands and waters have multiple values and multiple uses. A balance between development and preservation can be achieved. Conflicts can and are being resolved through the administrative process. The existing administrative processes are working, and should be given an opportunity to increase in effectiveness as the system becomes better understood and thus easier to comply with.

Reaction to section 7 is somewhat analogous to that experienced after passage of the National Environmental Policy Act. For at least three or four years after passage of NEPA in 1969, a number of projects which were initiated prior to that Act were confronted with what appeared to some to be insurmountable compliance problems and numerous court actions directing compliance were initiated. Recently, however, Federal agencies have included NEPA compliance as an integral part of their planning processes. Thus, conflicts resulting in court actions have lessened. There is no reason to believe that the Endangered Species Act will be any different. Since passage of the Act over four years ago there have been only three Federal projects impacted by court actions under section 7 and only one of these has resulted in what some consider an impasse. I am pleased to announce that consultations on that project—Tellico—have resumed. I believe that the conflict can be resolved in a mutually satisfactory fashion. Mr. Chairman, all of this indicates that implementation of section 7 is not having the profound adverse impact on Federal activities that many anticipate. Indeed, the impact has been quite the opposite.

In fiscal year 1977, when consultation was discretionary with the Federal development agency, over 4,500 were conducted by the Fish and Wildlife Service. Since the beginning of this year, approximately 1,500 consultation have been conducted. In fiscal year 1979, we expect that requests for consultations will exceed 20,000. Conflicts can and are being resolved through this administrative process. Section 7 guidelines and regulations provide adequate mechanisms to assist Federal agencies in carrying out their actions in ways which are consistent with the needs of endangered and threatened species.

The delineation of critical habitat is one way we help Federal agencies in their decisionmaking process. The function of critical habitat designation is to biologically delineate the habitat of a species which is necessary to its continued existence and recovery. Without such information, Federal agencies do not have all of the data useful in making decisions as to whether their programs or actions are compatible with the requirements of section 7. Federal agencies must decide whether an action it intends to authorize, fund or carry out will adversely impact an endangered or threatened species or its habitat regardless of whether or not the critical habitat has been delineated. The Fish and Wildlife Service is striving to list critical habitat, when it is a significant factor in the species continued existence, at the same time the species is listed. This is done, when possible, so that other Federal agencies which might be contemplating an action in the vicinity of an endangered or threatened species will have all available information on the species at the earliest possible time in their decisionmaking process.

Critical habitat designation does not prohibit or provide for any particular kind of activity or land use. Such designation does not mean an inviolate sanctuary. It does not mean a wilderness or pristine, undisturbed area. It does not mean a refuge or Federal acquisition of private lands. It does not address or in any way imply what Federal activities can or cannot be carried out and it does not address non-Federal actions. It is simply an administrative process for recognizing a biological fact; that is, the area of land, water, or airspace essential to the normal needs and survival of the listed species. We do not have authority to tell another Federal agency what it can or cannot do. We provide advice, but the final decision rests with the Federal

agency contemplating the action. Depending on the action contemplated by the Federal agency, compliance with the National Environmental Policy Act may be necessary. Any major Federal action which significantly affects the quality of the human environment is subject to an environmental assessment or impact statement under NEPA. Generally, critical habitat designation in itself is not a major Federal action and the listing itself does not significantly affect the quality of the human environment. Such designation is merely an administrative action providing biological information. However, it should be pointed out that the Fish and Wildlife Service is actually complying with NEPA in the process of critical habitat designation. As a matter of policy, the Service undertakes an environmental assessment of its contemplated action. To date, such assessments have resulted each time in a negative declaration, that is to say, in a finding that an Environmental Impact Statement is unnecessary.

Such things as constructing a dam, building a road, channelizing a river or logging a forest may or may not be subject to NEPA, and the Federal action may or may not be subject to section 7 of the Endangered Species Act. The Federal agency contemplating the action must address the issues of compliance with these laws. As I previously stated, they must address the issues regardless of whether a critical habitat has been officially listed. Their action would be contrary to section 7 if it jeopardized the continued existence of a listed species regardless of whether the species critical habitat had been officially designated. Depending on the action, the Federal agency may be subject to citizens suits under section 11(g) of the Act if a "taking" (applicable to animals only) is involved in violation of section 9(a)(1) of the Act (endangered species only) or possibly section 4(d) of the Act (threatened species).

Generally, decisions regarding compliance with the Endangered Species Act and with NEPA have to be made by the Federal agency contemplating an action on a case-by-case or program-by-program basis as the situation arises. In the vast majority of cases, we have found that there are alternatives and environmental values can be accommodated regardless of the action contemplated.

It is the responsibility of the Federal action agency to make decisions regarding its programs, not the Fish and Wildlife Service acting through the Secretary of the Interior, unless, of course, it is a Department of the Interior program. This is consistent with other laws involving resource management such as the Fish and Wildlife Coordination Act, the National Environmental Policy Act and the Department of Transportation Act.

Regulations have been published prescribing the consultation process to assist Federal agencies in complying with section 7 of the Act. This rulemaking requires Federal agencies to consult with the Service if their activities or programs may affect listed species or their habitats. Under the regulations, when Fish and Wildlife Service officials receive a request for consultation from another Federal agency, it is required that we evaluate an activity's impact within 60 days. At that time, the Service determines whether the activity will have no impact on listed species, will actually benefit the species, or is likely to have a harmful effect. The Service can also request further studies if necessary in order to render a final biological opinion. The regulations recognize that general consultation procedures must be sufficiently flexible to accommodate the myriad activities that are authorized, funded, or carried out by the Federal Government. The regulations provide for the drafting of joint counterpart regulations by Federal agencies, with assistance from the Service and the National Marine Fisheries Service, that are tailored to the needs of individual agencies.

As you know from February hearings on the endangered species program, the Administration has made the implementation of section 7 a high priority. President Carter, in his Environmental Message stated that "... to hasten the protection of threatened and endangered species, I am directing the Secretaries of Commerce and Interior to coordinate a government-wide effort, as required by the Endangered Species Act of 1973, to identify all habitat under Federal jurisdiction or control that is critical to the survival and recovery of these species. The purpose of this program is to avoid the possibility that such habitats will be identified too late to affect Federal project planning. Major projects now under way that are found to pose a serious threat to endangered species should be assessed on a case-by-case basis."

As a supplement to that statement, the President sent a special message to the Secretaries of Interior, Agriculture and Defense and the Chairman of the Tennessee Valley Authority directing them to identify lands under their jurisdiction which appear to be critical habitat for endangered or threatened species. This information is then to be submitted to the appropriate Secretary for a determination of critical habitat if such a determination is justified. The Secretaries of Interior and Com-

merce were specifically directed to develop an expedient schedule for implementing this process and to provide guidance and coordination to assure compliance.

The timetable calls for completion of the surveys by January 1980. The plan places the highest priority on identifying the habitat of species facing the greatest threats and will require designation of critical habitat for 35 species in fiscal year 1978, and 77 in fiscal year 1979. To date, critical habitat determinations have been made for 24 species and proposals have been published in the *FEDERAL REGISTER* for 41 more. Completion of this survey identifying critical habitat at the end of fiscal year 1980 will substantially lessen the possibility of future conflicts involving development projects on Federal lands and protection of endangered species and their critical habitats.

Congressional concern about rapidly deteriorating wildlife habitat, indiscriminate utilization of wildlife and increasing numbers of species threatened with extinction resulted in a series of legislative actions culminating in December 1973 in the Endangered Species Act. The primary purpose of the endangered species program as directed by the 1973 Act is to prevent plant and animal species endangerment and extinction caused by man's influence on ecosystems, and to return the species to the point where they are no longer threatened or endangered.

Man's activities threaten a growing number of species with extinction. However, many endangerments and extinctions can be prevented by the protection of a relatively small area or by the careful development of land and water use projects. I believe that the section 7 consultation process has proved that there are resource development alternatives that can be implemented which will allow resource utilization to meet man's physical and material needs, and yet insure natural diversity.

During the first few years after enactment of the Endangered Species Act, there was considerable concern that we were not carrying out the mandates of the Act either efficiently or expediently. Now, the concern seems to be that we are too zealous in pursuit of the goals of the Act. This sort of pendulum reaction to new programs is not uncommon. I believe we will see, over the next year or two, the disappearance of that reaction. The Act provides a sound, rational approach to resource management which should not be jeopardized because of unjustified overreaction.

Mr. Chairman, this concludes my prepared statement. I would be pleased to answer any questions you might have.

U.S. Fish and Wildlife Service
Endangered Species Program
Five Year Resource Requirements

Subprograms	FY 1979 Justification*	FY1979 Actual Requirements *	FY 1980 Estimate	FY 1981 Estimate	FY 1982 Estimate	FY 1983 Estimate
Planning & Coordination	\$ 8,462	\$ 9,496	\$14,458	\$16,000	\$17,000	\$18,000
Species & Habitat Mgmt- Service Lands	2,510	5,951	5,900	6,500	7,000	7,500
Species & Habitat Mgmt- Non Service Lands	859	1,807	1,800	2,500	2,800	3,000
Law Enforcement	3,323	4,147	4,400	4,800	5,500	6,000
Research	1,288	1,841	2,000	2,200	2,700	3,500
Total Section 15	\$16,442	\$23,242	\$28,558	\$32,000	\$35,000	\$38,000
Grants-In-Aid	3,000	4,000	4,000	5,000	5,000	5,000
Total Requirements	\$19,442	\$27,242	\$32,558	\$37,000	\$40,000	\$43,000

*Dollars include Pay Act Projections.

U.S. FISH AND WILDLIFE SERVICE

Endangered Species Act

SPECIES LISTINGS (As of April 30, 1978)

	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals	33	227	260	3	17	20
Birds	68	144	212	3		3
Reptiles	10	46	56	6		6
Amphibians	5	9	14	2		2
Fishes	29	10	39	12		12
Snails		1	1			
Clams	23	2	25			
Crustaceans	1		1			
Insects	6		6	2		2
Plants	15		15	2		2
TOTAL	190	439	629	30	17	47

Number of species currently proposed: 107 animals
1,867 plants (approximately)

CRITICAL HABITAT LISTINGS (As of April 30, 1978)

Number of Critical Habitats proposed: 37
Number of Critical Habitats listed: 29

STATUS OF ACTIONS ON CRITICAL HABITAT

Mammals

	Proposed	Final
Morro Bay kangaroo rat	8/30/76	8/11/77
Florida manatee	12/16/75	9/24/76
Indiana bat	12/16/75	9/24/76
Grizzly bear	11/5/76	
Virginia big-eared bat	12/2/77	
Ozark big-eared bat	12/2/77	
Gray wolf	6/9/77	3/9/78

Birds

	Proposed	Final
Mississippi sandhill crane	9/3/75	8/8/77
Cape Sable sparrow	7/14/76	8/11/77
Peregrine falcon	8/30/76	8/11/77
Yellow-shouldered blackbird	6/10/76	11/19/76
Dusky seaside sparrow	12/3/76	8/11/77
Florida Everglade kite	12/3/76	8/11/77
Palila	12/22/76	8/11/77
California condor	12/16/75	9/24/76
Whooping crane	12/16/75	5/15/78

Reptiles

	Proposed	Final
American crocodile	12/16/75	9/24/76
Giant anole	1/10/77	7/21/77
St. Croix ground lizard	1/10/77	6/3/77
Mona boa	5/26/77	2/3/78
Mona ground iguana	5/26/77	2/3/78
Leatherback Sea turtle	3/23/78	
New Mexican ridge-nosed rattlesnake	5/26/77	

Amphibians

	Proposed	Final
Black toad	3/11/77	
Florida Pine Barrens treefrog	4/5/77	11/11/77
Golden coqui	4/5/77	11/11/77
Houston toad	5/26/77	1/31/78

FISH

	Proposed	Final
Snail darter	12/16/75	4/1/76
Leopard darter	7/6/76	1/27/78
Alabama cavefish	1/12/77	9/9/77
Yellowfin madtom	1/12/77	9/9/77
Slackwater darter	1/12/77	9/9/77
Spotfin chub	1/12/77	9/9/77
Slender chub	1/12/77	9/9/77
Little Kern golden trout	9/1/77	4/13/78
Woundfin	11/2/77	
Cahaba shiner	11/29/77	
Spring pygmy sunfish	11/29/77	
Pygmy sculpin	11/29/77	
Goldline darter	11/29/77	
Waccamaw darter	12/30/77	
Waccamaw killifish	12/30/77	
Waccamaw silverside	12/30/77	
Ouachita madtom	12/30/77	
Barrens topminnow	12/30/77	

Molluscs and Crustaceans

	Proposed	Final
Cal. freshwater shrimp	1/12/77	
Verrucose river snail	1/12/77	
Umbilicate river snail	1/12/77	
Spiny river snail	1/12/77	
Small geniculate river snail	1/12/77	
Mainstream river snail	1/12/77	
Jay's river snail	1/12/77	
Indiana river snail	1/12/77	
Geniculate river snail	1/12/77	
Elk river snail	1/12/77	
Dutton's river snail	1/12/77	
Rugged river snail	1/12/77	
Armigerous river snail	1/12/77	

Butterflies

	Proposed	Final
Lotis Blue butterfly	2/8/77	
Lange's Metalmark butterfly	2/8/77	
San Bruno elfin butterfly	2/8/77	
Mission Blue butterfly	2/8/77	
Smith's Blue butterfly	2/8/77	
El Segundo Blue butterfly	2/8/77	

Plants

	Proposed	Final
<u>Antioch Dunes evening primrose</u>	2/8/77	

MONTHLY REPORT

STATUS OF COOPERATIVE AGREEMENTS

May 1, 1978.

1. States that have signed Cooperative Agreements

<u>State</u>	<u>Agreement Signed</u>
Arkansas	6/23/76
California	6/23/76
Colorado	6/23/76
Delaware	6/23/76
Florida	6/23/76
Georgia	10/06/77
Maine	6/23/76
Maryland	7/23/76
Michigan	6/23/76
Missouri	7/23/76
Nebraska	8/02/77
New Jersey	6/23/76
New York	6/23/76
New Mexico	6/23/76
North Carolina	1/13/77
South Carolina	6/23/76
South Dakota	6/23/77
Virginia	12/23/76
Washington	6/23/76
Wisconsin	8/16/76
Tennessee	12/23/77

2. States which have QUALIFIED:

<u>State</u>	<u>Date Notified</u>
Alaska	3/29/76
Pennsylvania	4/06/78

3. States with authorities and/or program LACKING OR UNCLEAR

<u>State</u>	<u>Date Notified</u>
American Samoa	3/12/77
Connecticut	6/13/75
Guam	3/21/77
Hawaii	2/14/77
Idaho	
Iowa	10/05/77
Kansas	
Louisiana	3/15/77
Montana	11/01/76
North Dakota	
Puerto Rico	2/14/77
Utah	5/04/77
West Virginia	5/05/77
Wyoming	2/11/75

4. States which have not submitted authorities and/or program:

State

Alabama
Arizona
Indiana
Illinois
Kentucky
Massachusetts .
Minnesota
Mississippi
Nevada
New Hampshire
Ohio
Oklahoma
Oregon
Rhode Island
Saipan
Texas
Vermont
Virgin Islands

Summary Sheets

Federal funds allocated for State endangered species programs in 1977 and through January 5, 1978

Species or Activities	No. of Species or Categories	Federal Share (\$1,000's)
Mammals	21	1,033.3
Birds	26	1,994.8
Reptiles	9	221.4
Amphibians	6	111.0
Fishes	9	331.4
Invertebrates	<u>1</u>	<u>18.4</u>
Subtotal	60	3,708.3
Information-Education	-	92.6
Law Enforcement	-	38.8
Administration, etc.	<u>-</u>	<u>1,080.1</u>
Subtotal	-	1,211.5
TOTAL	60	4,919.8

Foreign Activities - Sec. 8-Endangered Species Act continued

Organization or Country	Date of Agreement	Name or Type of Agreement	Activity and Accomplishment
Mexico	6/30/76	USA-Mexico Joint Committee on Wildlife Conservation.	Cooperative wildlife programs including brown pelican, whooping crane, peregrine falcon, California condor, Mexican grizzly and wolf, jaguar, clapper rail, pronghorns, Southern bald eagles, and masked bob-white quail; law enforcement and training.
IUCN	9/77	Detail of FWS personnel through UNEP.	Executive Officer to IUCN/SSC.
India Pakistan Egypt	1977	No Agreement - Special Foreign Currency Program through Endangered Species Act of 1973.	Endangered Species Research and Management, including training and public awareness.
Canada	ongoing	Cooperation on law enforcement.	Law enforcement of Endangered Species Act, Marine Mammal Act, and Migratory Bird Act.
Canada	ongoing	Stems from 1964 agreement to pick up eggs.	Whooping Crane protection and observation.
Guyana	Est. not to be implem. before 2-3 yrs.	Pending - Environmental Prot. Agree.	International Center for Manatee Research
USSR	awaiting ratification by Senate	Conservation of Migratory Birds and their Environments.	Joint Protection of Migratory Birds and their Habitat.

**CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD
FLORA AND FAUNA**

COUNTRIES THAT HAVE DEPOSITED INSTRUMENTS OF RATIFICATION

1	United States	1/14/74
2	Nigeria	5/9/75
3	Switzerland	7/9/74
4	Tunisia	7/10/74
5	Sweden	8/20/74
6	Cyprus	10/18/74
7	United Arab Emirates	11/21/74 (accession)
8	Ecuador	2/11/75
9	Chile	2/14/75
10	Uruguay	4/2/75
11	Canada	4/10/75
12	Mauritius	4/28/75
13	Nepal	6/18/75 (accession)
14	Peru	6/27/75
15	Costa Rica	6/30/75
16	South Africa	7/15/75
17	Brazil	8/6/75
18	Madagascar	8/20/75
19	Niger	9/8/75
20	German Democratic Rep.	10/9/75 (accession)
21	Morocco	10/16/75
22	Ghana	11/14/75
23	Papua New Guinea	12/12/75 (accession)
24	Federal Republic of Germany	3/22/76
25	Pakistan	4/20/76 (accession)
26	Finland	5/10/76 (accession)
27	India	7/20/76
28	Zaire	7/20/76 (accession)
29	Norway	7/27/76
30	Australia	7/29/76
31	United Kingdom (& territories)	8/2/76
32	Iran	8/3/76
33	Union of Soviet Socialist Rep.	9/9/76
34	Paraguay	11/15/76
35	Seychelles	2/8/77 (accession)
36	Guyana	5/27/77 (accession)
37	Denmark	7/26/77
38	Senegal	8/5/77 (accession)
39	Nicaragua	8/6/77 (accession)
40	Gambia	8/26/77 (accession)
41	Venezuela	10/24/77
42	Egypt	
43	Botswana	
44	Malaysia	
45		
46		
47		
48		
49		
50		

U.S. Fish and Wildlife Service

JAN 30 1978

STATUS OF RECOVERY TEAMS

59 Teams Appointed by Director:

American Alligator
 Red Wolf
 Kirtland's Warbler
 Indiana Bat
 Mississippi Sandhill Crane
 Dusky Seaside Sparrow
 Delmarva Fox Squirrel
 Blue Pike
 Maryland Darter
 American Peregrine Falcon (Eastern population)
 California Condor
 Columbia White-tailed Deer
 Warm Springs Pupfish
 San Joaquin Kit Fox
 Eastern Timber Wolf
 Cui-ui
 Light-footed Clapper Rail
 American Peregrine Falcon (Rocky Mountain population)
 California Least Tern
 Santa Cruz Long-toed Salamander
 Greenback Cutthroat Trout
 Northern Rocky Mountain Wolf
 Kauai Forest Birds
 Hawaiian Crow (Alala)
 Hawaii Forest Birds (Big Island)
 Nene (Hawaiian Goose)
 Yuma Clapper Rail
 Maui/Molakai Forest Birds
 Palila
 Black-footed Ferret
 Laysan Duck
 Mexican Duck
 Aleutian Canada Goose
 Apache Trout
 Gila Trout
 Masked Bobwhite
 Everglade Kite
 Sonoran Pronghorn
 Red-Cockaded Woodpecker
 Colorado River Squawfish
 Woundfin
 Arctic Peregrine Falcon

Okaloosa Darter
E. Brown Pelican
Whooping Crane
Blunt-nosed Leopard Lizard
Unarmored Threespine Stickleback
American Crocodile
Hawaiian Waterbirds (Stilt, Coot, Gallinule)
Pahrump Killifish
Devils Hole Pupfish
American Peregrine Falcon (Pacific Population)
Houston Toad
Watercress Darter
Puerto Rican Parrot
Puerto Rican Plain Pigeon
Florida Manatee
Southwestern Bald Eagle
Chesapeake Bay Bald Eagle

RECOVERY TEAM/PLAN STATUS						
TEAM	RECOVERY TEAM STATUS		RECOVERY PLAN STATUS			
	REGION'S NOMINATIONS RECEIVED	APPROVED BY DIRECTOR	TECHNICAL REVIEW DRAFT RECEIVED	AGENCY REVIEW DRAFT RECEIVED	PLAN RECEIVED FOR DIRECTOR'S APPROVAL	PLAN APPROVED BY DIRECTOR
Region 1	1/6/75	4/16/75			2/5/75	4/9/75
	1/8/75	4/21/75				
	1/8/75	4/21/75	4/10/76			
	1/8/75	4/16/75			8/12/75	8/18/75
	1/6/75	4/16/75	3/15/76	1/77	9/13/76	10/21/76
	1/6/75	4/16/75	8/26/76		8/23/77	9/28/77
	1/6/75	4/16/75	12/1/75	8/26/76		
	1/8/75	4/16/75	12/1/75		12/2/77	
	1/8/75	4/16/75		5/23/77		
	1/6/75	4/16/75		9/6/77		
						Rough Draft

RECOVERY TEAM STATUS

RECOVERY TEAM
STATUS

RECOVERY PLAN STATUS

TEAM	REGION'S NOMINATIONS RECEIVED	APPROVED BY DIRECTOR	TECHNICAL REVIEW DRAFT RECEIVED	AGENCY REVIEW DRAFT RECEIVED	PLAN RECEIVED FOR DIRECTOR'S APPROVAL	PLAN APPROVED BY DIRECTOR	COMMENTS
California Least Tern	1/8/75	4/16/75		12/21/77			
San Joaquin Kit Fox	1/6/75	4/16/75				11/10/76	
Warm Springs Pupfish	1/6/75	4/16/75				9/23/76	
Nene	1/8/75	4/16/75					
Kauai Forest Birds	1/8/75	4/16/75					
Molokai-Mauai Forest Birds	1/8/75	4/16/75					
Unarmored Threespine Stickleback	12/3/75	1/26/76		9/6/77	12/7/77	12/28/77	
Blunt-nosed Leopard Lizard	12/3/75	1/26/76					
American Peregrine Falcon (Pacific Population)		2/19/76					
Devil's Hole Pupfish	3/25/76	5/28/76					
Pahrump Killifish	3/25/76	5/25/76					

TEAM	RECOVERY TEAM STATUS			RECOVERY PLAN STATUS					COMMENTS
	REGION'S NOMINATIONS RECEIVED	APPROVED BY DIRECTOR	TECHNICAL REVIEW DRAFT RECEIVED	AGENCY REVIEW DRAFT RECEIVED	PLAN RECEIVED FOR DIRECTOR'S APPROVAL	PLAN APPROVED BY DIRECTOR			
<u>Region 3</u> Eastern Timber Wolf Kirtland's Warbler Blue Pike	10/31/74	4/16/75		1/4/77	6/21/76	10/22/76		Prelim	
	10/31/74	1/20/75			1/22/76	6/29/76		Interim	
	10/31/74	2/27/75							
<u>Region 4</u> Mississippi Sandhill Crane Verigade Kite American Alligator American Crocodile Florida Rican Parrot Florida Rican Plain Pigeon Louis Darter Cochise Woodpecker	11/12/74	1/20/75	5/1/76		8/5/76	9/14/76			
	11/12/74	5/13/75							
	11/4/74	2/27/75							
		3/30/76							
	7/3/75	3/18/76	10/76						
	3/1/76	4/27/76							
	8/12/75	9/5/75							
	4/21/75	6/9/75	7/27/76						

TEAM	RECOVERY TEAM STATUS		RECOVERY PLAN STATUS					COMMENTS
	REGION'S NOMINATIONS RECEIVED	APPROVED BY DIRECTOR	TECHNICAL REVIEW DRAFT RECEIVED	AGENCY REVIEW DRAFT RECEIVED	PLAN RECEIVED FOR DIRECTOR'S APPROVAL	PLAN APPROVED BY DIRECTOR		
Rocky Mountain Peregrine Falcon Population	3/14/75	4/9/75	6/12/76	10/19/76	3/25/77	08/03/77	Interim	
	5/20/75	8/14/75		11/07/77				
	03/14/75	4/9/75		07/06/77				
	10/31/74	01/20/75						
Indiana Bat	02/13/75	04/09/75	06/12/76	07/06/77	06/13/75	06/01/76		
Sanback Cutthroat Trout								
h Prairie Dog - Utah to handle								
Alaska								
tian Canada Goose	04/29/75	05/09/75	05/18/76	07/12/77				
ic Peregrine Falcon	04/29/75	08/15/75	12/30/77					

ENDANGERED SPECIES PERMITS*

	<u>Applications Carried Over From Previous Fiscal Year</u>	<u>Applications Received</u>	<u>Final Actions Taken</u>
Fiscal Year 1977	120	796	584
Fiscal Year 1978 (Through May 1, 1978)	332	748	924

*Includes applications for permits under the Endangered Species Act, and as of March 1977, applications under the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

U.S. FISH AND WILDLIFE SERVICE

Endangered Species Act

Law Enforcement

Fiscal Year 1977

Initiated:	2,523 cases
Carried Over From FY 1976:	729 "
Closed:	2,132 "

FUNDING NEEDS WHICH CAN BE MATCHED
(in \$1,000's)

<u>State</u>	<u>Funding Needs*</u>	
	<u>FY 78</u>	<u>FY 79</u>
Washington	72.7	72.7
Wisconsin	67.5	81.9
TOTAL	5,098.8	2,931.3

*Based on Approved Allocations and Communications with Regional Offices.

FY 1979 ENDANGERED SPECIES LWCF SCHEDULE

	<u>AMOUNT</u> <u>(\$000)</u>	<u>ACRES</u>	<u>TRACTS</u>
BAT HABITAT (GREY BAT), AL	\$ 475	178	1
ANTIOCH DUNES (LANGE'S METALMARK BUTTERFLY), CA	300	54	2
SAN DIEGO (LIGHT-FOOTED CLAPPER RAIL, CALIFORNIA LEAST TERN), CA	6,300	900	10
TEHACHAPI MOUNTAINS (CALIFORNIA CONDOR), CA	8,500	56,000	1
PALO ALTO (AMERICAN CROCODILE), FL	115	80	1
BAT HIBERNATION HABITAT (INDIANA BAT), IL/IN/MD	250	200	5
MIO (KIRTLAND'S WARBLER), MI	100	220	5
OCEAN SPRINGS NWR (MISSISSIPPI SANDHILL CRANE), MS	9,700	9,000	18
ASH MEADOWS (WARM SPRINGS PUFFISH), NV	500	720	7
MOAPA RIVER (MOAPA DACE), NV	<u>600</u>	<u>100</u>	<u>1</u>
TOTAL	\$26,840	67,452	51

SUMMARY OF LWCF APPROPRIATIONS
(based on transfer of funds from BOR)

<u>FY</u>		<u>Project</u>	<u>Cost</u>
1967	<u>Recreation</u>	New London	\$ 300
		Lake Ilo	12,915
		Hebron	5,800
		Washita	6,900
		Columbia	26,000
		Horicon	35,000
		Mississippi River	3,500
		National Elk	57,500
		Total	\$ 147,915
1968	<u>Endangered Species</u>	National Key Deer	\$ 1,797,637
1969	<u>Endangered Species</u>	Patuxent	\$ 373,912
		Mason Neck	375,000
		Total	\$ 748,912
1970	<u>Recreation</u>	Tennessee	\$ 200,000
		McNary	50,000
		Total	\$ 250,000
	<u>Endangered Species</u>	Okefenokee	\$ 590,000
		Mason Neck	372,120
		Patuxent	375,000
		Total	\$ 1,337,120
		1970 Total	\$ 1,587,120
1971	<u>Recreation</u>	McNary	\$ 95,000
		Ding Darling	1,500,000
		Wheeler	55,000
		Chautauqua	35,000
		Mark Twain	140,000
		Cape Romain	300,000
		Harrison Lake	60,000
		Dungeness	350,000
		National Elk	1,000,000
		Total	\$ 3,535,000
	<u>Endangered Species</u>	Patuxent	\$ 300,000
		Mason Neck	1,750,000
		Columbian White-tail Deer (Tenasillahe)	1,000,000
		Okefenokee	1,000,000
		Attwater Prairie Chicken	408,100
		Total	\$ 4,458,100
		1971 Total	\$ 7,993,100

<u>FY</u>		<u>Project</u>	<u>Cost</u>
1972	<u>Endangered Species</u>	St. Johns	\$ 1,000,000
		Hawaiian Waterbirds	1,000,000
		Columbian White-tail Deer	1,088,000
		Attwater Prairie Chicken	250,000
		Blackwater	150,000
		Total	\$ 3,488,000*
		*Unallocated by Unit	
1973	<u>Recreation</u>	Salton Sea	\$ 15,000
		Santa Ana	25,000
		Mark Twain	125,000
		Wheeler	230,000
		Mammoth Spring	15,000
		Cedar Keys	129,000
		National Key Deer	178,000
		Great Swamp	125,000
		Total	\$ 842,000
	<u>Endangered Species</u>	Attwater Prairie Chicken	\$ 250,000
		California Condor	745,000
		Columbian White-tail Deer	800,000
		St. Johns	300,000
		Endangered Waterbirds	1,000,000
		Total	\$ 3,095,000
	<u>Specially Legislated</u>	Featherstone	\$ 560,000
	<u>Wilderness</u>	Monomoy	\$ 100,000
		1973 Total	\$ 4,597,000
1974			---
1975	<u>Recreation</u>	National Elk	\$ 750,000
		Mason Neck	250,000
		Total	\$ 1,000,000
	<u>Endangered Species</u>	Attwater Prairie Chicken	\$ 350,000
		Seaside Sparrow	944,000
			\$ 1,294,000
	<u>Specially Legislated</u>	San Francisco Bay	\$ 6,000,000
		Tinicum	1,200,000
		Total	\$ 7,200,000
		1975 Total	\$ 9,494,000

<u>FY</u>		<u>Project</u>	<u>Cost</u>
1976	<u>Recreation</u>	National Elk Mason Neck Petit Manan San Bernard Total	\$ 200,000 397,000 175,000 300,000 \$ 1,072,000
	<u>Endangered Species</u>	Attwater Prairie Chicken St. Johns Great White Heron Santa Cruz Salamander Mississippi Sandhill Crane Hawaiian Waterbirds Total	\$ 300,000 300,000 100,000 500,000 2,900,000 2,300,000 6,400,000
	<u>Specially Legislated</u>	San Francisco Bay Tinicum Dismal Swamp Total	\$ 400,000 300,000 1,250,000 \$ 1,950,000
		1976 Total	\$ 9,422,000
<hr/>			
1976 TQ	<u>Recreation</u>	San Bernard Desert Santa Ana Great Swamp Total	\$ 500,000 100,000 200,000 399,000 \$ 1,199,000
	<u>Endangered Species</u>	Mississippi Sandhill Crane Hawaiian Waterbirds Total	\$ 1,000,000 500,000 \$ 1,500,000
	<u>Specially Legislated</u>	Dismal Swamp	\$ 500,000
		1976 TQ Total	\$ 3,199,000

<u>FY</u>		<u>Project</u>	<u>Cost</u>
1977	<u>Addition to Existing Areas</u>	National Elk San Bernard Great Swamp Desert Santa Ana Ding Darling Total	\$ 300,000 800,000 493,000 400,000 300,000 300,000 \$ 2,593,000
	<u>Endangered Species</u>	Dusky Seaside Sparrow Great White Heron Mississippi Sandhill Crane Hawaiian Waterbirds Attwater Prairie Chicken Total	\$ 750,000 1,500,000 2,500,000 2,000,000 350,000 \$ 7,100,000
	<u>Specially Legislated</u>	San Francisco Bay Tinicum Great Dismal Swamp Total	\$ 1,600,000 750,000 2,500,000 \$ 4,850,000
	<u>Deficiencies</u>		\$ 1,200,000
		1977 Total	\$15,743,000
BLHP (1977 Supple- mental)	<u>Addition to Existing Areas</u>	Havasu Great Swamp Klamath Forest Total	\$ 1,500,000 1,150,000 250,000 \$ 2,900,000
	<u>Endangered Species</u>		
(Aleutian Goose)		Del Norte	\$ 500,000
(Light-footed Clapper Rail)		San Diego	200,000
		Hawaiian Waterbird	2,400,000
(Indiana and Gray Bat)		Bat Hibernation	700,000
(Delmarva Fox Squirrel)		Blackwater	1,300,000
(Mississippi Sandhill Crane)		Ocean Springs	1,700,000
(Attwater Prairie Chicken)		Eagle Lake	1,000,000
		Total	\$ 7,800,000
	<u>Special Legislation</u>		
(Wilderness)		Chassahowitzka	\$ 500,000
(Wilderness)		Lake Woodruff	50,000
		Great Dismal Swamp	2,000,000*
		Total	\$ 2,550,000
		*\$1,500,000 available for reprogramming	
		BLHP Total	\$13,250,000
		GRAND TOTAL	\$71,467,684

LAND AND WATER CONSERVATION FUND
OBLIGATIONS FY 1977

Land Obligations as of September 30, 1977				
Category/Unit	Number Tracts	Type of Obligation	Acres	Cost
ENDANGERED SPECIES				
Hawaiian Waterbirds	3	Fee	2.83	\$ 67,250
Hawaiian Waterbirds	1	Lease	142.20	55
Santa Cruz Salamander	2	Fee	7.37	51,000
Columbian White-tailed Deer	-	Defic.	-	976,937
Atwaters Prairie Chicken	1	Fee	2,587.20	215,000
Okefenokee	-	Defic.	-	20,781
Mississippi Sandhill Crane	3	Fee	6,399.00	4,535,300
Dusky Seaside Sparrow	3	Fee	48.76	17,600
Dusky Seaside Sparrow	3	D.T.	1,521.76	558,850
Great White Heron	1	Fee	2,939.80	1,300,000
Total Endangered Species	17		13,648.92	\$ 7,742,773
SPECIALLY LEGISLATED				
San Francisco Bay	34		18.32	\$ 383,360
Great Dismal Swamp	4	Fee	10,167.51	1,320,613
Great Dismal Swamp		Timber		487,500
Tinicum	1	Part.Int.	11.00	4,888
Total Specially Legislated	39		10,196.83	\$ 2,196,361
RECREATION				
Desert	9	Fee	175.00	\$ 304,500
Santa Ana	7	Fee	230.09	321,363
San Bernard	1	Fee	1,331.40	700,000
Havas	1	Fee	1,580.00	1,500,000
J.N. Ding Darling	1	Fee	30.70	24,000
J.N. Ding Darling	1	D.T.	17.03	25,550
Great Swamp	11	Fee	399.04	885,425
Mason Neck	1	Part. Int.	10.00	17,500
National Elk	1	Fee	10.31	100,000
Lake Ilo	1	Fee	0.72	3,100
Total Recreation	34		3,784.29	\$ 3,881,438
WILDERNESS				
Monomoy	2	D.T.	2.00	\$ 61,700
TOTALS	92		27,632.04	\$13,882,272

SUMMARY					
Category	Number Tracts	Acres	Land Cost	Incidental Cost	Total Cost
Endangered Species	17	13,648.92	\$ 7,742,773	\$1,216,227	\$ 8,959,000
Specially Legislated	39	10,196.83	2,196,361	1,270,639	3,467,000
Recreation	34	3,784.29	3,881,438	641,340	4,522,778
Wilderness	2	2.00	61,700	18,300	80,000
Total	92	27,632.04	\$13,882,272	\$3,146,506	\$17,028,778

LAND AND WATER CONSERVATION FUND
FY 1978 ACQUISITION SCHEDULE

Category/Project	Prior Year		New Authority		Total	
	Acres	Cost	Acres	Cost	Acres	Cost
ENDANGERED SPECIES						
Okefenokee	2,100	\$ 210,000			2,100	\$ 210,000
Dusky Seaside Sparrow	260	534,000	540	\$ 1,100,000	800	1,634,000
Mississippi Sandhill Crane	--	213,000			--	213,000
Hawaiian Waterbirds	580	5,419,000	120	1,000,000	700	6,419,000
Atlatres Prairie Chicken	--	1,028,000	1,746	1,800,000	1,746	2,828,000
Aleutian Canada Goose	413	485,000			413	485,000
Light-footed Clapper Rail/ Least Tern	50	199,000	456	1,725,000	506	1,924,000
California Clapper Rail/ Salt Marsh Harvest Mouse			3,050	2,250,000	3,050	2,250,000
Santa Cruz Salamander	- 7	- 78,000	52	200,000	45	122,000
Indiana/Grey Bat	700	635,000	245	525,000	945	1,160,000
Delmarva Fox Squirrel	2,450	1,270,000			2,450	1,270,000
California Condor			--	1,560,000	--	1,560,000
St. Croix Ground Lizard	13	265,000			13	265,000
TOTAL ENDANGERED SPECIES	6,559	\$10,180,000	6,209	\$10,160,000	12,768	\$20,340,000
ADDITIONS TO EXISTING AREAS						
Mason Neck	10	\$ 48,000			10	\$ 48,000
National Elk	15	171,000			15	171,000
San Bernard	--	14,000	1,100	\$ 1,100,000	1,100	1,114,000
Great Swamp	149	827,304	175	750,000	324	1,577,304
Desert	45	88,000			45	88,000
Santa Ana	63	28,000	518	600,000	581	628,000
Ding Darling	11	216,000			11	216,000
Bombay Hook			150	250,000	150	250,000
Great White Heron		1,000	200	500,000	200	501,000
Glometh Forest	265	250,000			265	250,000
Lake Ilo	1	11,000			1	11,000
Pevasu	--	100,000			--	100,000
TOTAL ADDITIONS TO EXISTING AREAS	559	\$ 1,754,304	2,143	\$ 3,200,000	2,702	\$ 4,954,304
SPECIAL LEGISLATION						
San Francisco Bay	7,644	\$ 1,283,000			7,644	\$ 1,283,000
Delcun	414	1,561,000	123	\$ 4,350,000	537	5,911,000
Great Dismal Swamp	5,043	1,355,000	17,470	4,800,000	22,513	6,155,000
Minnesota River Valley			8,900	7,800,000	8,900	7,800,000
Massachusetts Wilderness	375	486,000			375	486,000
Lake Woodruff Wilderness	40	50,000			40	50,000
TOTAL SPECIAL LEGISLATION	13,516	\$ 4,735,000	26,493	\$16,950,000	40,009	\$21,685,000
DEFICIENCIES		\$ 141,000		\$ 978,000		\$ 1,119,000
AVAILABLE FOR REPROGRAMMING		\$ 1,250,000				\$ 1,250,000
TOTAL PROGRAM	20,634	\$18,060,304	34,845	\$31,288,000	55,479	\$49,348,304

Division of Realty
December 2, 1977

LAND AND WATER CONSERVATION FUND
OBLIGATION STATUS AS OF FEBRUARY 28, 1978

Region	Project	Program	Activity	Planned	Obligated	Total	Balance	Percent of Planned Fund
					Land	Other		
1	Hawaiian Natterbirds Alouatta Chrysops California Gnatcatcher Calif. Gnatcatcher Santa Cruz Salamander California Condor San Francisco Bay Deer Elephant Subtotal	OES OES OES OES OES OES OES OES OES OES	8940	\$ 6,399,000	\$ 10,000			
			8940	1,000,000				
			8940	2,194,000		\$ 202,417	\$ 246,422	012,350,518
			8940	1,211,000				
			8940	1,512,000				
			8953	1,283,000	50,700			
			8953	88,000				
			8953	329,000				
			8953	316,210,000	\$ 94,700	\$ 321,950	\$ 416,644	013,401,336
			8953	2,799,000				
2	Attwater Prairie Chicken Santa Ana San Bernardino Havens Subtotal	OES OES OES OES OES	8940	\$ 2,799,000				
			8953	620,000		\$ 10,966	\$ 10,966	0 2,796,016
			8953	1,087,000				
			8953	1,087,000				
			8953	1,000,000				
			8953	4,406,000	100,000	\$ 301,479	\$ 495,839	1,311,161
			8953	4,406,000	100,000			
			8953	4,406,000	100,000	\$ 317,465	\$ 506,835	0 4,099,175
			8953	149,000				
			8953	7,631,000		\$ 20,397	\$ 20,397	0 149,000
3	Indiana Bat Minnesota Valley Subtotal	OES OES OES	8940	\$ 149,000				
			8953	7,631,000		\$ 20,397	\$ 20,397	0 2,610,403
			8953	7,780,000		\$ 20,397	\$ 20,397	0 7,759,603
			8940	210,000				
			8940	213,000				
			8940	1,000,000	\$ 34,000			
			8940	1,000,000	91,750			
			8940	854,000				
			8940	285,000	250,000	\$ 313,390	\$ 694,740	0 2,436,360
			8940	1,000				
4	Okefenokee Nashville Nashville Indiana Gray Bat St. Louis Gr. Lizard Great White Heron Chesapeake Bay Chesapeake Bay J.R. Ding Darling Great White Heron Subtotal	OES OES OES OES OES OES OES OES OES OES	8940	\$ 210,000				
			8940	213,000				
			8940	1,000,000	\$ 34,000			
			8940	1,000,000	91,750			
			8940	854,000				
			8940	285,000	250,000	\$ 313,390	\$ 694,740	0 2,436,360
			8940	1,000				
			8953	486,000				
			8953	50,000				
			8953	310,000				
5	Indiana Bat Indiana Bat Great Swamp Great Swamp Huron Hawk Belted Kingfisher Tintinn Subtotal	OES OES OES OES OES OES OES OES	8940	\$ 100,000				
			8940	1,270,000				
			8940	6,044,000				
			8953	1,561,000	\$1,004,000	\$ 4,246	\$ 4,246	0 1,265,754
			8953	4,483,000	581,040			
			8953	244,000	56,750	\$ 623,134	\$ 2,079,936	5,819,346
			8953	244,000				
			8954	5,003,000	7,335			
			8954	815,072,304	\$1,335,137	\$ 313,736	\$ 12,483	0 2,719,217
			8954	815,072,304	\$1,335,137	\$ 313,736	\$ 12,483	0 2,719,217
6	Indiana Bat Indiana Bat National Elk Lake Erie Subtotal	OES OES OES OES OES	8940	\$ 75,000				
			8940	171,000				
			8953	35,000	\$ 21,000	\$ 23,366	\$ 45,386	160,416
			8953	282,000	\$ 21,000	\$ 23,366	\$ 45,386	0 233,311
			8953	105,000				
			8953	1,225,000				
			8953	1,059,000				
			8953	2,429,000				
			8953	553,000				
			8953	949,346,304	\$1,919,768	\$ 202,090	\$ 445,082,904	0 945,082,904
9	Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher Belted Kingfisher	OES OES OES OES OES OES OES OES OES OES	8940	\$ 105,000				
			8940	1,225,000				
			8940	1,059,000				
			8940	2,429,000				
			8940	553,000				
			8940	949,346,304	\$1,919,768	\$ 202,090	\$ 445,082,904	0 945,082,904
			8940	105,000				
			8940	1,225,000				
			8940	1,059,000				
			8940	2,429,000				
0	GMD (Distributive) Total	OES OES OES OES OES OES OES OES OES OES	8940	\$ 593,000				
			8940	949,346,304	\$1,919,768	\$ 202,090	\$ 445,082,904	0 945,082,904
			8940	105,000				
			8940	1,225,000				
			8940	1,059,000				
			8940	2,429,000				
			8940	553,000				
			8940	949,346,304	\$1,919,768	\$ 202,090	\$ 445,082,904	0 945,082,904
			8940	105,000				
			8940	1,225,000				

FY 78 Research Contracts

- (1) Grizzly Bear:
 - (a) To determine, in a joint contract with the National Park Service, the status of the Grizzly Bear and the factors contributing to that status in the Yellowstone Ecosystem. The contract is to be issued by the NPS by cooperative agreement with FWS. (\$20,000)
 - (b) To determine the status and distribution of the Grizzly Bear and the factors contributing to that status in western Montana. (\$40,000)
- (2) To continue the experiment to establish a wild population of the whooping crane in Idaho through cross-fostering with the wild greater sandhill crane. (\$47,700)
- (3) To determine the status and distribution and factors related to the possible jeopardization of plants and animals that may be affected by proposed phosphate mining on Osceola National Forest, Florida. Species to be investigated include those listed or proposed by the Service as Endangered or Threatened. Funding is to continue through the first quarter of FY 1978. Quarterly progress reports due PM within 30 days following close of each quarter. Final report due by March 31, 1978. (\$60,000)
- (4) To carry out programmed releases of captive propagated masked bobwhite in Arizona in accordance with recovery plan (contract with University of Arizona). (\$17,000)
- (5) To release captive propagated peregrine falcons at various sites (contract with Cade). (\$30,000)

a. Laurel, Maryland

(1) Whooping crane - \$30,000

- (a) To produce whooping cranes in captivity for supplementing existing wild populations or for developing additional wild flocks. (FY-82)
- (b) To determine the effects of the incubation environment on crane egg hatchability. (FY-80)
- (c) Experimentally induce the onset and extent of the annual feather molt in cranes. (FY-80)
- (d) Determine the influence of methionine on the growth rate of young cranes. (FY-79)

(2) Aleutian Canada Goose - \$20,000

- (a) To produce in captivity up to 100 individuals of the Aleutian Canada Goose (goslings and/or eggs) and deliver to Anchorage, Alaska, as needed for re-establishment on habitats where this species has been extirpated. (FY-82)

(3) Black-footed ferret - \$13,000

- (a) To provide care for and rear the Siberian polecat in confinement. (FY-79)
- (b) To develop radiotelemetric devices and harnessing methods with captive polecats. (FY-78)
- (c) To provide care for and rear the Black-footed ferret in confinement. (FY-82)

(4) California Condor - \$5,000

- (a) To maintain the captive Andean condor and offspring for production and release experimentation. (FY-85)

(5) Masked Bobwhite Quail - \$5,000

- (a) To prepare comprehensive manuscript on masked bobwhite quail research findings. (FY-78)

(6) Mississippi Sandhill Crane - \$8,000

- (a) Develop and maintain a production unit of 10 pairs for reintroduction efforts in south-eastern Mississippi. (FY-82)

(7) General responsibilities - \$22,000

- (a) Evaluate a series of immobilizing agents to facilitate surgery and medication of endangered species. (FY-79)
- (b) Provide adequate disease control and disease prevention for captive populations. (FY-82)
- (c) Identify genetic problems and apply remedial measures. (FY-82)
- (d) Provide genetic planning in captive animal production and develop genetic criteria. (FY-78)
- (e) Provide technical input into preparation and updating of recovery plans as recovery team leaders, members, and consultants for the following species: (No funds allocated - travel provided in Regional objectives) (FY-82)

Dusky seaside sparrow
 California condor
 Eastern timber wolf
 Light-footed clapper rail
 California least tern
 Kauai forest birds
 Hawaii forest birds
 Molokai-Maui forest birds
 Black-footed ferret
 Aleutian Canada Goose
 Masked bobwhite
 Florida Everglade kite
 Whooping crane
 Puerto Rican parrot
 Puerto Rican Plain pigeon
 Pacific population of American peregrine falcon
 Hawaiian crow
 Laysan duck
 Palila

b. California Field Station - \$12,400

- (1) Complete and begin implementing the California condor contingency plan which will include testing artificial nest sites and inspecting wild nests. (FY-80)

c. Florida Field Station - \$3,000

- (1) Complete the dusky seaside sparrow manuscript.(FY-78)
- (2) Complete a comprehensive monograph of the Florida Everglade kite.
- (3) Assist, as necessary, in determining potential impacts on the Florida Everglade kite from developments on its habitat.

d. Three Hawaii Field Stations - \$25,300

- (1) To participate in forest bird status and distribution surveys on the island of Hawaii:

Hamakua coast (FY-78)

Kona coast (FY-78)

- (2) By extensive studies, determine the breeding biology, habitat characteristics, and limiting factors of the Oo, ou, nukupuu, and the large Kauai thrush on Kauai. (FY-79)
- (3) Complete a general survey of endangered and threatened avian species on Maui and prepare study recommendations. (FY-79)

e. Minnesota - \$44,900

- (1) Determine wolf blood parameter baseline data.(FY-78)
- (2) Study the ecology of wolves in northwestern Minnesota. (FY-78)
- (3) Study coactions between wolves and small associated species. (FY-78)
- (4) Study wolf-deer interactions during a low deer population density. (FY-78)
- (5) Develop techniques for, and monitor, Eastern timber wolf populations relative to impacts of relocating or taking wolves.

- (6) Investigate techniques for verification of wolf damage to domestic animals.
- f. South Dakota - \$4,200
 - (1) Develop new survey techniques for black-footed ferret.
 - (2) Draft a comprehensive monograph on the black-footed ferret.
- g. Puerto Rico - \$4,800
 - (1) To develop management recommendations for Puerto Rican parrots. (FY-78)
 - (2) Determine the importance of red-tailed hawk predation on Puerto Rican parrots. (FY-78)
 - (3) Rear Puerto Rican parrots in captivity for bolstering the wild population and to increase the captive breeding population. (FY-82)
 - (4) Study the status and distribution of the yellow-shouldered blackbird in Puerto Rico. (FY-78)
 - (5) Develop cowbird control methods to protect the nests of yellow-shouldered blackbirds. (FY-79)
 - (6) Determine habitat requirements of the yellow-shouldered blackbird. (FY-79)
 - (7) Develop management recommendations for the yellow-shouldered blackbird. (FY-79)
 - (8) Determine habitat requirements and make management recommendations for Puerto Rican plain pigeons. (FY-79)
 - (9) Develop status survey procedures for Puerto Rican whip-poorwills. (FY-78)

Total Fixed Costs	\$731,000
Total Discretionary Costs	192,600
Total for Objective 5	\$923,600

JAN 31 -78

CAPTIVE PROPAGATION PROG. FOR ENDANGERED SPECIES

Species	Propagation	Number of this Species in Captivity	Propagation Technique Developed?	Young Produced	Releases Made	Remarks
Goose, Aleutian	at PWRC, NPMRC & Anchitka	150+ adults 50+ young	Yes	Yes	Yes	75 were shipped to Alaska in 1977. Production of goslings on Anchitka was encouraging.
Nene	by State	1000	Yes	Yes	Yes	Work done entirely by State. They are producing well in captivity.
Kite, Everglade	No plans		Yes	No	No	
Parrot, Puerto Rican	at PWRC	16 in Puerto Rico	Being worked on	No	No	One pair in captivity in Puerto Rico is showing signs of pre-nesting behavior. Deepening and other modification of nesting cavities and provisions of artificial nesting structure for pearly-winged thrasher (a predator/competitor) seem to have reduced the danger to the Puerto Rican parrot.
Quail, Masked Bobwhite	at PWRC	about 400 breeders	Yes	Yes	Yes	Releases are encouraging. Pre-release conditioning and rearing methods have shown good results and some coveys have survived 77-78 winter.
Wolf, Red	Tacoma Zoo	12	Yes	Yes	No	Some question as to whether these are pure red wolves.

JAN 3 1979

CAPTIVE PROPAGATION PROG. FOR ENDANGERED SPECIES.

Species	Propagation	Number of this Species in Captivity	Propagation Technique Developed?	Young Produced	Releases Made	Remarks
Condor, Andean	at PMRC	14	Yes	Yes	No	All 4 pairs at PMRC produced eggs last year. Three young were reared.
Condor, California		1	Same as Andean Condor	No	No	1 bird at Los Angeles Zoo.
Crane, Mississippi sandhill	at PMRC	PMRC 16	Yes	Yes	No	Captive stocks have never produced eggs approaching 70-80% fertility rate of greater and Florida sandhill cranes. This subspecies cannot be considered as robust as other sandhill cranes.
Crane, Whooping	at PMRC	PMRC 21 Int. Crane Trust 2 Zoos 4	Yes	Yes	No	Fourteen eggs were transferred to Grays Lake from PMRC. Several hatched but were lost because of adverse weather and predation.
Crow, Hawaiian	by State	3	No	No	No	Work being done by State.
Falcon, Peregrine	Cornell	100+	Yes	Yes	Yes	Results are encouraging
Ferret, Black-footed	at PMRC	3	Progress being made	None survived	No	One female produced 5 kits. Four were stillborn and the other died after 6 days. One adult was lost this year from cancer.

1978

OUTLINE FOR USE OF EXCESS FOREIGN CURRENCIES
FISCAL YEAR 1977, 1978

(Unless noted, the species are on the U.S. List of Endangered Fauna)

<u>NATION</u>	<u>PROPOSAL</u>	<u>AMOUNT</u>	
		<u>FY '77</u>	<u>FY '78</u>
India	1. A study of the endangered and threatened fauna of the eco-systems in South India.	\$ 43,800	\$ 42,500
	2. Research on endangered and threatened crocodilian species.	60,000	50,000
	3. Research and development on endangered dugongs.	16,600	14,200
	4. A cooperative IUCN, World Wildlife Fund, and Service "Project Tiger" research and management plan to protect and preserve viable populations of tigers.	100,000	70,000
	*5. Research on endangered and threatened pythons.	10,800	10,000
	**6. Research on endangered and threatened monitor lizards.	12,300	11,000
		<u>\$243,500</u>	<u>\$197,700</u>
Egypt	1. Undertake research and management project for the following:		
	a. Nile crocodile	\$ 50,000	\$ 40,000
	b. Cheetah	40,000	30,000
	c. Leopard	50,000	40,000
	d. Dugong	60,000	40,000
	e. Slender-horned gazelle	<u>31,500</u>	<u>25,500</u>
		<u>\$231,500</u>	<u>\$175,500</u>

*Species on the Convention on International Trade in Endangered Species of Wild Fauna and Flora Appendix I.

**Species on the Convention on International Trade in Endangered Species of Wild Fauna and Flora Appendix II.

<u>NATION</u>	<u>PROPOSAL</u>	<u>AMOUNT</u>	
		<u>FY '77</u>	<u>FY '78</u>
Pakistan	1. Conduct status surveys for endangered and threatened species. Ten species are on the U.S. List, 15 additional species are on the Convention Appendix II.	\$125,000	\$100,000
		<u>\$125,000</u>	<u>\$100,000</u>
<hr/>			
	GRAND TOTAL	\$600,000	\$473,200

FOREIGN ACTIVITIES - SEC. 8-ENDANGERED SPECIES ACT

Organization or Country	Date of Agreement	Name or Type of Agreement	Activity and Accomplishment
Brazil	10/12/40	Western Hemisphere Convention on Nature Protection and Wildlife Conservation (Cooperative Agreement 1/30/77).	Manatee study, migratory bird banding endangered primate study.
Venezuela	10/12/40	Western Hemisphere Convention on Nature Protection and Wildlife Conservation. Initiation of project proposals awaiting implementation.	Development of endangered species management program, study on use and needs for regional training center for wildlife management.
Brazil Guyana Uruguay Mexico Jamaica Dominican Repub.	10/12/40 and 12/21/72	Western Hemisphere Convention on Nature Protection and Wildlife Conservation, and Marine Mammal Protection Act.	Manatee studies - population dynamics and management plans.
Peru Chile Ecuador	10/12/40 and 12/21/72	Western Hemisphere Convention on Nature Protection and Wildlife Conservation, and Marine Mammal Protection Act.	Marine otter - population dynamics.
USSR Canada	12/2/46	Whaling Convention Act.	Provide information on biology of species and recommend management of species and marine ecosystems.

Foreign Activities - Sec. 8-Endangered Species Act continued

Organization or Country	Date of Agreement	Name or Type of Agreement	Activity and Accomplishment
Japan	5/64	US/Japan Conference on Natural Resource Development (UNJR)	Cooperation in environmental protect.
International Union for Conservation of Nature and Natural Res. (IUCN)	9/65	No agreement - bilateral cooperative study discussions.	Polar Bear Specialist Group.
IUCN	1971	Crocodile Specialist Committee Survival Service Commission	Crocodile Specialist Group Coordinator
USSR	5/22/72	Environmental Protection Agreement	Bering Sea Studies, Research on Pesticide effects on fauna, Conservation of Wild Fauna and Flora, Protection of Northern Ecosystems.
Australia New Guinea Malagasy Republic Kenya, Egypt, India, Philippines	12/4/72	No agreement - International cooperation under Marine Mammal Act.	Dugong research on population dynamics
USSR Canada	12/21/72	No agreement - International cooperation under Marine Mammal Act.	Polar Bear Research, population dynamics and movements.

Foreign Activities - Sec. 8-Endangered Species Act continued

Organization or Country	Date of Agreement	Name or Type of Agreement	Activity and Accomplishment
Canada Greenland Denmark	12/21/72	No agreement - international cooperation under Marine Mammal Protection Act.	Atlantic Walrus - Review status and develop management plans.
USSR Canada	3/3/73 and 12/28/73	No agreement - international cooperation under CITES and ESA.	Law enforcement - liaison, cooperation and coordination of foreign investigations under CITES and ESA.
USSR Canada	3/3/73	Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES).	U.S. Management Authority to issue permits, U.S. Scientific Authority to advise on issuance of permits.
USSR Canada	12/28/73	No agreement - international cooperation under Endangered Species Act (ESA).	List foreign species as threatened or endangered from status reviews.
Italy	4/74	FWS technical assistance provided thru World Wildlife Fund (paid by WWF) to Italy - no agreement	Training Biologist in Radio Tracking Wolves.
Saudi Arabia	6/9/74	US-Saudi Arabia Joint Commission on Economic Cooperation. 11/23/75 Technical Cooperation Agreement	Research and management plan on bustards and falcons.
Spain	7/19/74 1/24/76	Treaty of Friendship and Cooperation. Memorandum of Cooperation on Conservation of Natural and Cultural Resources.	Spanish National Parks/and Reserves, Management Plan for Cota Donana.

The 12 species on which the largest investment of grant-in-aid funds is being made.

Species	Federal funds (1,000's)	Number of States
1. Peregrine falcon	\$497.2	12
2. Prairie sharp-tailed grouse (S)	386.0	1
3. California yellow-billed cuckoo (S)	300.0	1
4. Fresno kangaroo rat (S)	270.0	1
5. Greater prairie chicken (S)	215.3	1
6. Morro Bay kangaroo rat	210.4	1
7. Bald eagle	155.7	10
8. Colorado squawfish	133.5	2
9. Indiana bat	132.6	6
10. Red-cockaded woodpecker	106.4	6
11. Southern sea otter	93.7	
12. California condor	90.9	

(S) State listed species

A total of 4,508 acres of habitat for endangered species will be purchased by three States at a cost of \$1.7 million.

<u>Species and State</u>	<u>Federal Share (1,000's)</u>	<u>Habitat</u>
Morro Bay kangaroo rat, CA	\$200.0	50-acre ecological reserve
Fresno kangaroo rat, CA	270.0	480-acre Alkali Sink ecological reserve
Pacific peregrine falcon, CA	150.0	703-acre Palisades ecological reserve
California condor, CA	60.0	80-acre Pothole Spring ecological reserve
California yellow-billed cuckoo, CA	300.0	200-acre Upper Butte Basin ecological reserve
Leopard lizard, CA	38.7	160-acre leopard lizard ecological reserve
Indiana bat, MO	58.0	275 acres and Great Scott Cave
Greater prairie chicken, CO	215.3	1,280 acres of native grassland
Prairie sharp-tailed grouse, CO	386.0	1,280 acres of native grassland

Federal funds (\$1,000's) allocated for State endangered
species programs in 1977 and through January 5, 1978

<u>Mammals</u>	<u>Funds</u>	<u>States</u>
Indiana bat	132.6	AR, MD, MO, NY, NC, VA
Gray bat	10.7	AR, NC
Delmarva fox squirrel	32.3	DE, MD, VA
Morro Bay kangaroo rat	210.4	CA
Fresno kangaroo rat	270.0	CA
Salt marsh harvest mouse	10.0	CA
Eastern timber wolf	15.2	MI
Red wolf	3.3	AR
Northern kit fox	3.4	SD
San Joaquin kit fox	54.8	CA
Swift fox (S)	7.3	NE
Black-footed ferret	54.2	CO, NE, SD
River otter (S)	14.0	CO
Southern sea otter	93.7	CA
Eastern cougar	23.3	AR, NY, NC, VA
Florida panther	11.7	FL
Bobcat (S)	50.3	CA, MD, MO
Florida manatee	2.0	NC
Columbia white-tailed deer	14.1	WA
Lynx and wolverine (S)	<u>18.0</u>	CO
TOTAL	1,031.3	

(S) State listed species

<u>Birds</u>	<u>Funds</u>	<u>States</u>
Eastern brown pelican	27.7	FL, NC, SC, VA
California brown pelican	11.0	CA
Aleutian Canada goose	16.0	CA
California condor	90.9	CA
Florida everglade kite	2.0	FL
Cooper's hawk	0.8	NJ
Lesser prairie chicken (S)	6.7	CO
Prairie sharp-tailed grouse (S)	386.0	CO
Greater prairie chicken (S)	215.3	CO
Osprey (S)	29.8	NJ, NY, WI
Bald eagle	155.7	CA, DE, FL, ME, MD, NJ, NY, NC, SC, VA
Peregrine falcon	497.2	CA, CO, MD, NE, NJ, NM, NY, NC, SC, SD, VA, WA
San Clemente loggerhead shrike	5.0	CA
Greater sandhill crane (S)	9.3	CO
Whooping crane	9.7	NE, SD
California clapper rail	11.0	CA
Yuma clapper rail	7.7	CA
Light-footed clapper rail	7.7	CA
California least tern	17.7	CA
Least tern (S)	4.6	NJ
Piping plover (S)	4.7	WI
Red-cockaded woodpecker	106.4	AR, FL, MD, NC, SC, VA
California yellow-billed cuckoo (S)	300.0	CA
Kirtland's warbler	66.3	MI

<u>Birds (cont.)</u>	<u>Funds</u>	<u>States</u>
San Clemente sage sparrow	5.0	CA
Dusky seaside sparrow	<u>0.6</u>	FL
TOTAL	1,994.8	

Reptiles

American alligator	73.5	AR, FL, NC, SC
American crocodile	1.2	FL
Bog turtle (S)	47.8	MD, NJ, NY
Loggerhead turtle	21.6	SC
Sea turtles	0.4	NJ, NY
Blunt-nosed leopard lizard	38.7	CA
Giant garter snake (S)	15.1	CA
San Francisco garter snake	18.6	CA
Massasauga rattler	<u>4.5</u>	NY
TOTAL	221.4	

Amphibians

Santa Cruz long-toed salamander	18.6	CA
Desert slender salamander	18.6	CA
Hellbender (S)	16.7	MD
Jefferson salamander (S)	33.9	MD
Eastern tiger salamander (S)	21.6	MD
Salamanders (S)	<u>1.6</u>	NJ
TOTAL	111.0	

<u>Fishes</u>	<u>Funds</u>	<u>States</u>
Pallid and other sturgeons (S)	40.0	MO
Greenback cutthroat trout	36.0	CO
Colorado Cutthroat trout	36.8	CO
Coregonid fishes	10.7	WI
Mohave chub	18.6	CA
Colorado squawfish	133.5	CA, CO
Owens pupfish	18.6	CA
Tecopa pupfish	18.6	CA
Unarmored Three-spine stickleback	<u>18.6</u>	CA
TOTAL	331.4	

Invertebrates

Freshwater mussels	<u>18.4</u>	VA, WI
TOTAL	18.4	

Information - Education	92.6	AR, CO, DE, FL, MD, NC, SC, WI
Law Enforcement	38.8	DE, MD, NJ
Administration, Coordination, Planning, etc.	1,080.1	AR, DE, FL, MI, NY, SC, WI

FUNDING NEEDS WHICH CAN BE MATCHED
(in \$1,000's)

<u>State</u>	<u>Funding Needs*</u>	
	<u>FY 78</u>	<u>FY 79</u>
Arkansas	70.0	73.7
California	1,384.0	437.2
Colorado	926.3	889.1
Delaware	4.3	3.5
Florida	95.1	32.2
Georgia	100.0	100.0
Iowa	50.0	50.0
Maine	10.0	10.0
Maryland	196.8	53.3
Michigan	242.3	255.1
Missouri	133.4	75.1
Montana	75.0	75.0
Nebraska	23.8	27.8
New Jersey	1,041.1	41.1
New Mexico	9.9	9.9
New York	176.6	180.1
North Carolina	140.0	43.3
North Dakota	20.0	20.0
South Carolina	116.8	110.8
South Dakota	33.9	33.9
Tennessee	57.0	200.0
Utah	25.0	25.0
Virginia	37.3	30.6

U.S. FISH AND WILDLIFE SERVICE

Endangered Species Act

Law Enforcement

Fiscal Year 1977

Initiated:	2,523 cases
Carried Over From FY 1976:	729 "
Closed:	2,132 "

Mr. HERBST. As you know, section 7 provides for Federal inter-agency cooperation by directing the Secretary of the Interior to review programs administered by him and utilize such programs in protection and enhancement of endangered and threatened species. All other Federal agencies, in consultation with and with the assistance of the Secretary of the Interior, are to utilize their authorities in furtherance of the purposes of the act. Such agencies are to insure that their actions do not jeopardize the continued existence of an endangered or threatened species or result in destruction or modification of the species critical habitat.

It is this latter requirement that has been the subject of considerable publicity and misunderstanding. Basically, there are two areas of concern. One is the listing of critical habitat and what it means. The other is Federal resource development activities and what can or cannot be done.

This Congress has seen the introduction of some eight bills to reduce or eliminate what is perceived by some to be "irresolvable conflicts" between Federal resource development activities and section 7 of the Endangered Species Act. Some of the bills would exempt specific projects from compliance with section 7. Another approach exempts all projects initiated before listing of a species through a grandfathering arrangement.

Legislation recently reported by the Senate Environment and Public Works Committee would establish a seven member committee to rule on exempting Federal agencies from compliance with section 7 when an "irresolvable conflict" exists. There is also a bill in the Senate which would require the Fish and Wildlife Service to prepare an environmental impact statement prior to any determination of critical habitat.

Mr. Chairman, this administration is unalterably opposed to any substantive changes to section 7.

Mr. LEGGETT. What is the notice process when you establish a critical habitat?

Mr. HERBST. A proposed rulemaking, is published in the Federal Register. Comments from the public are solicited and then there is a final rulemaking.

Mr. LEGGETT. How much notice are people who live in the critical habitat given?

Mr. HERBST. The Governor is given notice of the proposed rulemaking, and then given 90 days to comment on behalf of the State.

Mr. LEGGETT. What sort of information do you send him?

Mr. HERBST. Mr. Chairman, I will let Keith Schreiner answer the question.

Mr. SCHREINER. Mr. Chairman, we send them complete data on the proposed rulemaking; that is all data that we have that supports the action that we are proposing. If critical habitat is involved, it would ordinarily include a map of the area. The Governor is then given 90 days in which to respond.

Mr. LEGGETT. Well, I understand the environmental commitment of the Department of the Interior, however, it appears to the subcommittee a little bit bizarre that \$100 million-plus could be spent for a project, and then regulations promulgated 6 years later stop work on the project when it is almost constructed, and then we do not have any discretion whatsoever to modify or to tailor the purposes of this act with the purposes of alternative construction.

Now, obviously that is not appropriate, and so what I am asking is, does this not bother you a little bit?

Mr. HERBST. Mr. Chairman, I believe the facts will show, and the record will show that the act is working. It is our opinion that it can work, and that the bulk, in fact, the vast majority of the conflicts that have occurred since the act was passed in 1973, have been resolved through the consultation process. Only three have reached the judicial level.

The two that have been discussed today, the Tellico Dam, for example, we do not believe there was meaningful consultation between TVA and the Service. TVA consulted primarily on the issue of transplanting the fish. They did not discuss the other possible alternatives or solutions.

Mr. LEGGETT. The act requires that you consult with other Federal agencies, so did you undertake this consultation as required by the act?

Mr. HERBST. Early on, the consultation process was discretionary. It was required that the Federal action agency initiate the consultation process. The recent activity between TVA and the Department of the Interior were initiated by the Secretary of Interior, requesting that TVA consult with us.

Within the last month and a half those consultations have started, and I am quite hopeful that with the new chairman, that they will result in acceptable solutions to that problem.

The other question, on the Mississippi—

Mr. LEGGETT. Now, are you satisfied that the Tellico problem can be resolved by negotiation?

Mr. HERBST. It is my feeling, Mr. Chairman, that is a distinct possibility. If the consultation is in good faith, if they will address the alternatives, if they will address the other possible solutions.

Mr. LEGGETT. So we are talking the same language that would presume the alternatives you are talking about would be, not using the structure for the purposes for which it was constructed.

Mr. HERBST. The alternatives are the possibility of a dry dam operation, the possibility of alternate uses of the dam site and the

reservoir site. The alternative of a possible diversion, and of course, the alternative of the transplant possibility being successful, which at this time is too early to judge.

Mr. LEGGETT. How long will it take to judge that?

Mr. HERBST. My estimate is that at least three to five seasons would be involved to judge whether the translocation of the species is a successful operation.

Mr. LEGGETT. Has not three gestation periods expired?

Mr. HERBST. Three more than have existed at the present time. there has been some reproduction, but it has been spotty. It is not sufficient to determine whether the species will survive on its own.

Mr. LEGGETT. Let me ask you this. Would you support the completion of this project if the snail darter can be successfully transplanted?

Mr. HERBST. We would not, Mr. Chairman, object on the basis of the Endangered Species Act.

Mr. LEGGETT. Do you have others in mind at this point?

Mr. HERBST. I have, separate from an official position, I feel that economic benefits of that dam, and the uses of it, are subject to cross examination as well.

Mr. LEGGETT. Well, I understand the economic benefits are subject to review. But do you have any reservations that, considering the cost of \$100 million-plus, the benefit of completion of the project does not clearly outweigh the detriment as measured by the corps, the Bureau, or GAO?

Mr. HERBST. Mr. Chairman, I do not believe that all the costs are sunk costs. I believe that much of that cost is a recoverable cost, because it was land acquisition, and the land could be sold.

Mr. LEGGETT. Would you answer my question?

Mr. HERBST. The answer to the question again is that we would not oppose the construction if a satisfactory solution to protection of the species was possible.

Mr. LEGGETT. But you are opposed to the construction of the dam because of the way it was originally authorized; is that right?

Mr. HERBST. If you are asking me my personal feeling, it is yes, I do.

Mr. LEGGETT. Does that affect your personal judgment at this point?

Mr. HERBST. It does not. The judgment of the listing of the species was before I was in office, and that is based on biological facts that a species is endangered.

Mr. LEGGETT. Is it your view that every single Federal project ought to be summarily abated if it infringes 3 percent on any existing Federal activity?

Mr. HERBST. It is my opinion that whenever a federally funded or federally authorized project comes in conflict with an endangered species, or the critical habitat of such species, that the consultation process should take place as early in the process as possible, and in a good faith manner. If that is done, I believe in most instances, if not all instances, the problem will be resolved.

Mr. LEGGETT. But would you answer my question?

Mr. HERBST. Would you repeat the question?

Mr. LEGGETT. Do you believe that whenever even three percent of the critical habitat of endangered species comes into conflict

with any Federal project, that the project ought to be summarily terminated?

Mr. HERBST. The answer is "No."

Mr. LEGGETT. Are you then in favor of amendments to the law?

Mr. HERBST. What type of amendments?

Mr. LEGGETT. Well, we can elaborate that later. Are you in favor of any amendment to the law?

Mr. SCHREINER. Mr. Chairman, the consultation——

Mr. LEGGETT. You can answer that yes or no.

Mr. SCHREINER. I cannot, sir, because I do not understand the question. I am sorry.

Mr. LEGGETT. The question is are you in favor of any amendment to this law?

Mr. SCHREINER. I am not, no.

Mr. LEGGETT. Irrespective of the hiatus prevented by the previous question. That does indicate a degree of intractability on the part of the administration, I might state.

So we will come back here in about 5 minutes after we vote. We will adjourn at about 4:30 until tomorrow.

[Short recess.]

Mr. LEGGETT. The meeting will please come back to order.

Now, we have a provision in section 7, which I would like to read. It says:

By taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species, and threatened species, or result in the destruction or modification of habitat of such species, which is determined by the Secretary, after consultation, as appropriate, with the affected States, to be critical.

Now, I notice that the regulations respecting this were promulgated in January of this year, and they have just been finalized, is that correct?

Mr. HERBST. Correct, Mr. Chairman.

Mr. LEGGETT. Did you have regulations in effect last year?

Mr. HERBST. Mr. Chairman, they had guidelines in effect.

Mr. LEGGETT. Guidelines?

Mr. HERBST. Yes.

Mr. LEGGETT. And what did those guidelines say?

Mr. HERBST. Keith, do you want to respond?

Mr. SCHREINER. Mr. Chairman, essentially the same thing that the regulations say now, except that they were not mandatory.

Mr. LEGGETT. They were discretionary?

Mr. SCHREINER. They were discretionary on the part of the Federal agency.

Mr. DINGELL. Which Federal agency?

Mr. SCHREINER. The Federal agency that is doing the action that may affect the endangered species.

Mr. DINGELL. Are you saying that they do not have to talk to you?

Mr. SCHREINER. No, I am saying that they did not, Mr. Congressman, under our guidelines, but they do under the regulations as they are now published in the FEDERAL REGISTER.

Mr. DINGELL. Are they complying with the regulations?

Mr. SCHREINER. Yes, sir, very well, for the most part.

Mr. DINGELL. Up until you said for the most part, I believe that you were complying with them. When you said that they were complying "for the most part," then they are not. Which is the fact?

Mr. SCHREINER. May I clarify, sir?

Many Federal agencies, because the regulations were finalized on January 4 of this year, are still not fully aware of them, and what they say and what they require. We are getting to them as fast as we can.

Mr. DINGELL. Do they not read the Federal Register?

Mr. SCHREINER. I cannot answer that.

Mr. DINGELL. Are you sending them letters to inform them?

Mr. SCHREINER. Yes, sir, we have sent them repeated letters.

Mr. DINGELL. Repeated letters?

Mr. SCHREINER. Yes, sir.

Mr. DINGELL. Are they not acknowledging them?

Mr. SCHREINER. Well, we sent letters notifying them that the section 7 regulations were published, sent them copies, notified them that their consultation was mandatory, and I think, Congressman, in all fairness, it just takes a bit of getting used to it.

Mr. DINGELL. Have you got an Executive order out at this point?

Mr. SCHREINER. There is no Executive order.

Mr. DINGELL. Does it not strike you that that might be a subject of recommendation by your agency?

Mr. HERBST. That would be possible, Congressman Dingell. We have felt that even under the discretionary provision in the past, with the exception of a couple of agencies, there has been good cooperation on the consultation process.

Mr. LEGGETT. I will reclaim some of my time here. Now, under the guidelines, what exactly did you say? Can you read the operative language, Keith?

Mr. SCHREINER. Yes, sir, I will try.

Whenever a Federal agency was going to take an action that might have an adverse effect on an endangered species or its habitat, it was suggested that they consult with us on all aspects of that activity. The consultation usually took the form of them making the request, us doing a quick onsite review, and making a quick determination of whether or not it would affect the species or its habitat.

We made a short report to that effect. If it did not affect the project we told them so, and that ended it. If it did, we entered into a more formal consultation of slightly longer duration, in which we examined the activities in depth, all ramifications of it, all alternatives to it, and then gave them our biological opinion, telling them usually one of three things.

On further examination, we find that it will not affect, and that is the end of it. On further examination we find that it will affect, and it is our belief that if you continue with that activity as planned, you will be in violation of section 7, or the third alternative which occurred most often, we believe that if you did such and such and such, the activity would not be in violation of section 7, in our opinion.

Mr. LEGGETT. Now, when you determined critical habitat, did you rather specifically survey the area, appraise what the species are doing there, and how they manifest themselves?

Mr. SCHREINER. Yes, sir, we do make surveys where that is necessary. Where that is already a part of the published literature we simply take it from there.

Mr. LEGGETT. Now, as I understand, you declared the snail darter area critical habitat in 1975; is that right?

Mr. SCHREINER. I believe that is correct, sir.

Mr. LEGGETT. And at that point how much had been expended for the development of the Tellico project?

Mr. SCHREINER. At the time the snail darter was discovered, about 20 percent of the funds were expended. When the darter was discovered it was generally known that it would probably qualify for the endangered list.

Mr. DINGELL. If I could, please, may I ask what consultation had taken place between your agency and TVA prior to that time?

Mr. SCHREINER. No consultation had taken place prior to that time, Mr. Congressman.

Mr. DINGELL. No consultation with TVA prior to that time?

Mr. SCHREINER. To the best of my memory, no. TVA is not subject to the requirements of the Fish and Wildlife Conservation Act.

Mr. DINGELL. None? Well, now, if I may, please, Mr. Chairman.

Mr. LEGGETT. Yes.

Mr. DINGELL. Can you advise me whether TVA now consults with you?

Mr. SCHREINER. Yes, sir, they have consulted to a limited degree on transplanting the fish to some other river system.

Mr. DINGELL. No, with regard to the consultation, did they consult with you?

Mr. SCHREINER. With regard to the——

Mr. DINGELL. Does TVA consult with you under section 7, as required by law?

Mr. SCHREINER. They are supposed to, yes, sir.

Mr. DINGELL. I did not ask you if they are supposed to. I can read the statute.

Do they consult with you?

Mr. SCHREINER. Yes, sir, they have consulted with us.

Mr. DINGELL. Do they do so in all instances, or do they do it when they so please.

Mr. SCHREINER. Well, sir, they did so in all instances, but in the manner which they damn well please.

Mr. DINGELL. That is not really consultation in compliance.

Mr. SCHREINER. No, sir, it is not.

Mr. DINGELL. Having established that, what responses have you received from your letters from TVA?

Mr. SCHREINER. Mostly negative.

Mr. DINGELL. Mostly negative. Can you submit your correspondence to TVA, and from TVA, for the record?

Mr. SCHREINER. We will be pleased to do so.

Mr. DINGELL. I would ask unanimous consent that that be placed in the record.

Mr. LEGGETT. We would like all your correspondence with the State of Tennessee and with TVA, between the period 1972 and the present, respecting this project.

Mr. SCHREINER. Yes, sir.

Mr. LEGGETT. Now, as I understand, you are required to consult with the Governor of the State, is that right?

Mr. SCHREINER. Yes, sir in listing a species or its critical habitat.

Mr. LEGGETT. But not with Federal agencies that are operating in a critical habitat area?

Mr. SCHREINER. That is corret sir; that comes later.

Mr. LEGGETT. Now, do you not think that would be an important thing when you establish a critical habitat, as an example, on a military base? Would it not be more important to consult with the Department of Defense, and let them know that you are going to be closing down a silo, or something like that?

Mr. SCHREINER. Mr. Chairman, it is common practice when we list a critical habitat on the land of a Federal agency to send them a copy of the final listing, and inform them of their responsibilities under section 7. This is always done, Mr. Chairman.

Mr. LEGGETT. That is like sending them an arrest ticket. You do not consult with them, though, respecting the action you are taking?

Mr. SCHREINER. Mr. Chairman, we cannot consult with them prior to the time we finally list, because it would be a violation of the Administrative Procedures Act. It would mean that we have made a final determination in fact before we write a final regulation.

Mr. LEGGETT. Well, do you not consult with the State concerning your proposed action?

Mr. SCHREINER. Yes, sir, prior to the time we do it.

The consultation—

Mr. LEGGETT. If you are consulting with the State, do you not think it is reasonable that you consult also with other major Federal agencies?

Mr. SCHREINER. Mr. Chairman, we discuss the issue with them frequently. Certainly, on their request, and certainly on our request. However, we do not consult in the official definition of that term.

Mr. LEGGETT. Now, in 1973, when it is agreed that we discovered the snail darter, \$35.6 million had been expended on the TVA project. You were designating critical habitat in an area that involved \$35.6 million of Federal investments and expenditure.

Now, what letter did you send to TVA in your consultation process prior to the time that you designated that project as critical habitat in 1975 at which time the investment had increased to \$60.4 million?

Mr. SCHREINER. Mr. Chairman, I have tried to answer that as directly as I now how.

The first official step we took was the proposal in the Federal Register. But before we had done that, we talked to TVA biologists, as well as other biologists, about where that critical habitat should be designated.

As a matter of fact, TVA had most of the data, or had a large part of the data. So there was discussion with them.

Mr. LEGGETT. In those discussions with them, did you tell them what the ramification of the designation of the critical habitat would be on that dam?

Mr. SCHREINER. We could not do that, sir, because we did not know that at the time.

Mr. LEGGETT. Well, you mean you are taking actions about which you do not know the ramifications?

Mr. SCHREINER. The only way that could be determined would be through the formal consultation process. At that time we had not looked at the project on the alternatives. We did not know what the dam would do. We did not know those things. That takes place during the formal consultation.

Mr. LEGGETT. What scares me about this process is that you are moving around the country taking action and you do not know what you are doing.

Mr. DINGELL. Mr. Chairman, I think we have a twofold problem. I am not sure that TVA is talking to the appropriate people, or that TVA is fully participating in the consultation process.

Mr. LEGGETT. I understand there is a problem that way, but there is a big problem the other way.

Mr. DINGELL. I am not quarreling with the chairman on that point.

Mr. LEGGETT. We have problems with other Federal agencies like the Corps of Engineers and the Bureau of Reclamation. It is not just TVA. when you encircle a local ongoing investment project that you are knowledgeable about, and where you can determine the reasonable investment that has been made by public entities prior to the time you take action, what you are telling me here today is that you do not give any word whatsoever to the local activity at all, other than writing a letter to the Governor, or having him call you on the telephone.

Mr. SCHREINER. Mr. Chairman, I hope I did not say that, nor imply that.

Mr. LEGGETT. You can correct the record in that regard.

Mr. SCHREINER. What I said was that our responsibility in listing a species, or designating a critical habitat, is obtaining the best scientific and commercial data available. That almost always involves working with the agency who owns the land. In most cases they have the information.

We cannot tell them that our listing of critical habitat is going to stop their project. It will not necessarily do so. All critical habitat does is point out an area to the Federal action agency where they should be careful about what they do in the future. It is simply a tool to help the Federal agency know where the critical area is, and where they should be careful in the future, when they are dealing in that area.

Mr. LEGGETT. Well, will you designate for me then any project in the country where a dam is allowed to proceed in the face of critical habitat?

The testimony before the subcommittee is that there was a 3-percent infringement on critical habitat of the leopard darter in Mr. Watkins' district. The matter, as I understand it, has not gone to court, but apparently his water developers have determined that

they are out of business, based on negotiations with your agency. If I could get an answer to that first, please.

Mr. SCHREINER. Mr. Chairman, I know of no dam that has been affected because of 3 percent of the critical habitat. I know of no such instance, and I believe none exists.

Mr. LEGGETT. Let me ask you this. Are you aware of that Luk-fata project?

Mr. SCHREINER. Yes, sir, I am aware of it.

Mr. LEGGETT. By your statement you indicate that there is more than 3-percent endangered species critical habitat involved.

Mr. SCHREINER. There is a problem with the project, Mr. Chairman, which I think you are well aware of. It has nothing to do with endangered species. It is on the list of projects that the President decided not to continue with.

However, be that as it may, the critical habitat that will be affected is of the leopard darter. It will affect nearly 80 percent of the leopard darter in our view. That is not just the Fish and Wildlife Service view, that is the view of several private professionals, as well.

Mr. DINGELL. Mr. Chairman, I think a perspective on how this statute works might be helpful here. As I understand the statute, an agency is not told that it cannot construct projects and go forward. They are simply advised as to the existing critical habitat and the presence of endangered species. Is that correct?

Mr. SCHREINER. That is correct, Mr. Dingell.

Mr. DINGELL. Then it could be, if an agency were not able to carry a specific project forward, then either the Attorney General or a private citizen would enter court and litigate this, is that the way the matter works?

Mr. SCHREINER. That is possible under section 11(g), which invites private suit.

Mr. DINGELL. Am I correct in saying that the State, or State game agency, could enter the court, and litigate the question?

Mr. SCHREINER. That is correct.

Mr. DINGELL. But in no event can you tell them that they can or cannot construct the project?

Mr. SCHREINER. We simply advise them on whether we think their action will be in violation of section 7 or not.

Mr. DINGELL. With regard to the Tellico project, when you first began consulting with these people, and officially advising them about the snail darter, how much money did they spend on actual construction of the dam?

Mr. SCHREINER. At that time?

Mr. DINGELL. About \$4 million, was it not?

Mr. SCHREINER. I do not know. To my knowledge the expenditure that was for the dam was a small part of the total cost. Most of the expenditure was for land acquisition. It was, I believe, approximately 75 percent expended for the dam construction.

Mr. DINGELL. When you notified them?

Mr. SCHREINER. When the species was listed.

Mr. DINGELL. Thank you, Mr. Chairman.

Mr. LEGGETT. I have indicated that we are going to adjourn at 4:30. The meeting will stand adjourned at this point, and I will ask the witnesses to return tomorrow morning.

The statement of Mr. Lyles will appear in the record at this point.

[The following was received for the record:]

STATEMENT OF CHARLES H. LYLES, EXECUTIVE DIRECTOR, GULF STATES MARINE FISHERIES COMMISSION

Mr. Chairman, members of the Merchant Marine and Fisheries Committee, ladies and gentlemen. My name is Charles H. Lyles. I am the executive director of the Gulf States Marine Fisheries Commission. I am here today not only representing that organization but also the Louisiana Shrimp Association and the Mississippi Coast Fisheries Association, the Alabama Fisheries Association, the Texas Shrimp Association, Southeastern Fisheries Association, the Shrimp Association of the Americas and the American Shrimp Cannery Association. These organizations represent just about all the fishing industry in the Southeast. Letters authorizing me to represent these organizations are attached and will be made a part of my testimony. I wish to call to your attention some of the many unreasonable, illogical and dictatorial aspects of Public Law 93-205 and request that some changes be made in this horrendous piece of legislation. It is regrettable that I find myself in a position of opposing this act since more than 40 years of my life has been dedicated to fishery conservation work in research, administration, enforcement and teaching. I cite this only to indicate my dedication to this important work. There is, however, aside from the test tube, the microscope, the law book and the class room a pragmatic world in which we must deal with people, their needs and their problems, I must emphasize the word needs for these always take precedent over wants. I am therefore asking that Public Law 93-205 be amended so that it conforms to accepted biological principles and that provisions be made to consider the usefulness of the animal being saved against the cost and the economic impact on people and their needs. The act should also be amended so that those who are damaged by the act have the same recourse as those requesting an animal or plant be placed on the endangered species list. We would also like to see an accounting of the costs of this act in government funds spent and in lost jobs and lost life because of construction delays.

My discussion centers around two major points. These are:

(1) Public Law 93-205 has as its main theme the creation of a static condition in a dynamic world. The earth is often referred to in popular terms as the terra firma. Nothing could be farther from the truth. We actually live on a comparatively thin crust encasing an enormous ball of fire. Bits and pieces of this crust drift around over these flaming gases pushing up new mountain ranges, creating new continents and rivers, and dividing forever whole races of animals and plants. These creatures adapt to the changing conditions or they simply perish. This process has been going on for a long, long time for we find embedded in the crust of this planet evidence of the disappearance of numerous species of both plants and animals. These animals simply reached the end of their biological limb and dropped off. They became extinct. The best known and most often quoted case is the dinosaurs. These creatures could no longer adapt to the changing world so they disappeared. Had Congress been in session, and had Public Law 92-205 been in force, we could have written the halls of Congress full of environmental impact statements and we could have created an enormous bureaucracy and spent billions of dollars but the dinosaur would have disappeared. They had simply reached the end of their biological limb and became extinct. This is as it should be for the orderly process of this planet is that only those fit to survive will survive. Public Law 92-205 creates a situation where man will attempt to overrule the process of nature. Let me comment on some aspects of section 4(a) of Public Law 93-205. This section states that the secretary shall by regulations determine whether any species is an endangered species or a threatened species because of any of the following factors:

Item 1 the present or threatened destruction, modification, or curtailment of its habitat or range;

Gentlemen I ask you? What do we do in the case of earthquakes and hurricanes. These natural disasters can and do change the face of the earth far more in a few hours, than man can in a year. Are we to assume because a species has been so threatened by natural disaster that we must immediately begin to spend enormous sums of money to undo what nature has done in order to protect the animal? This is foolhardy and should be opposed because it interferes with nature's way of selecting those most able to survive and because it is a wasteful and futile expenditure of public funds.

Item 2 of section 4(a) specifies overutilization for commercial, sporting, scientific or educational purposes.

The question here is what is meant by overutilizing? In my work in fisheries, I find few instances of proven overfishing to the point of exterminating a species. The shrimp fleet in the Gulf of Mexico and the South Atlantic is presently being charged with extermination of the Sea Turtle (several species), National Marine Fisheries Service and the Fish and Wildlife Service recently published notice in the Federal Register of the intent to revise the rules regarding the taking of these turtles. It was obvious they had their collective minds already made up because they gave only 17 days to comment. By the time I got the data there were 5 days remaining in which to analyze two sets of biased data and come up with an unbiased position. I refused to comment because no where could I find convincing data that trawls are a major contribution to the turtle's demise, I am reasonably convinced however, that with data from those who would protect the turtle on the one hand and on the other hand data from the fishermen who want to continue to make a living in the ocean, that no valid conclusion can be reached. However, with the Department of Commerce competing with the Department of the Interior as to who will be the shining knight that protects the turtle, fact and reason have little chance of survival. As you gentlemen well know the turtle is under the jurisdiction of the Department of Commerce while at sea, but as soon as he steps on shore he is under the Department of Interior. I wonder how much of this the poor turtle understands. Suffice to say few species have become extinct because of fishing operations.

Item 3 of section 4(a) states that an animal may be threatened by disease and predation.

Again gentlemen, this section of the law attempts to legislate against natural selection. Disease and predation both have a tendency to take the weaker animals and this is good. Only those capable of surviving should survive. We can exhaust the federal treasury trying to care for sick animals and those threatened by predation but without success. Now don't misunderstand me. I'm not without compassion, I live in the country in a rather isolated area, and quite often I care for sick or injured animals until they recover and then release them. I have found, however, that as often as not they are not able to cope with the situation and simply don't survive. I have found it best rather than return them to their natural habitat to donate them to a zoo where they live out their existence in a protected environment. We cannot do this on a mass scale as 93-205 dictates.

So much for section 4(a). What this section does is to attempt to override the rules of survival of the fittest and create an expensive government medicare operation for animals that become threatened in this world of hazardous living. Gentlemen, it is impossible to legislate a static condition in this dynamic world. With the very foundation of this government being shaken by inflation can we ask the taxpayer to support such an unscientific experiment with a legal structure that imposes hardships on the economy.

The second point that I wish to make deals with the awesome power this statute has given a government agency over the people and their welfare, and there is no recourse for those damaged by its impact. No where in the statute is consideration given to the needs of people. There are numerous instances where construction of dwellings, highways and other projects have been halted because this law protects some animal that has no value in the biological chain and no economic importance to man. Had Public Law 93-205 been in existence in 1840, we would still be grazing millions of buffaloes where we grow wheat and corn today. We need that vast area to care for the needs of people. Public Law 93-205 does not permit this. Let me refresh your memory about 40 sandhill cranes in Mississippi. For the last 5 years the Interstate 10 Highway has been held up across Jackson County because it approaches an area used by 40 sandhill cranes. Now mind you these 40 cranes are the same species hunted as legal game in other sections of the country but because they do not migrate they have been classified as a physiological strain. Only an experienced ornithologist can tell the difference between this crane and those that migrate in other areas. These birds have been declared an endangered species, a move that required a vast stretch of the imagination. As a result, I-10 is held up. The only other East-West highway across this area is highway 90 and all traffic must use this artery. The result is a highly congested artery so that the area is now considered the second most dangerous piece of highway in the United States. 26 to 30 people are killed on this 30 miles of roadway annually, many of which are the result of congestion caused by in completed highway. Gentlemen can we justify the taking of one human life to protect 40 sandhill cranes of dubious ancestry? Furthermore there is no positive proof that these birds would not move farther away if the

highway were completed. If they are adaptable they will move if they are not they should perish. I did not mean to get into the construction areas as I am more concerned with natural resources and their use for people but the crane case is such a bizarre case of disregard for human life and welfare as a result of the use of this act, that I felt it should be covered. I cite the case only to point out the unreasonable and arbitrary features of this piece of legislation.

We are in my opinion, on the verge of an era of expansion in mariculture. This will require altering some of our territorial sea in order to make full use of the potential, just as farmers have altered the land in order to increase crops. Public Law 93-205 is so inflexible it will permit altering any area if it endangers one species of an unimportant animal. The U.S. farmer has produced abundantly because he has had a good farm program, not withstanding recent events to the contrary, and his labor has fed much of the world. Our very safety is at stake in this starving world and we can ill afford laws which impede the development of mariculture, Public Law 93-205 will do just this.

Finally, the Endangered Species Act as it stands today presents serious problems concerning the ordinary principle of administrative delegation. The Act is completely biased and does not contain any provision for checks and balances whereby human factors can be given their appropriate weight. The basis for determining whether fish, wildlife or plants should be classified as endangered, embodied in Section 4(b), contains no criteria or guidelines as to the relative importance of the fish or wildlife as contrasted with the human behavior which may be affected by its classification as endangered. Section 4(b) of the Act desperately needs to be amended to give consideration to the question of what kind of organism is involved plus the inconvenience and cost to human beings that will result if a particular creature is to be preserved.

We also find totally unsatisfactory the present safeguards involving public participation in the process to classify any fish, wildlife or plants as endangered. The published requirements in the Federal Register, and a discretionary hearing before an agency with unquestionable bias that has tentatively determined a species to be endangered is not a fair trial. This is the kind of pseudo democracy which the majority of Americans find objectionable because it is designed merely to appease the public while preserving the biased institutional policies of an agency.

I am reminded of an article by Dick West of U.P.I. which speaks to the situation we now find ourselves in over Public Law 93-205. To quote Mr. West, in his discussion of a Japanese University research project to test the theories of how the pyramids were built some 4,500 years ago. He raises the very real question of whether the pyramids could in fact be built today. "Lets use as a case in point the Great Pyramid erected at Giza as a tomb for the late King Khufu.

It took 400,000 peasants 20 years to complete the structure, which included two million stone blocks, each weighing more than two tons. If current conditions were made retroactive, the first step in Khufu's entombment would have been the preparation of an environmental impact statement.

A number of questions would need answering such as: would a stone polyhedron with a polygonal base and triangular faces meeting in a common vertex, 481 feet in the air pose a menace to aviation?

Or suiting the question of the times, was there a danger that Ra, the Egyptian Sun God, might snag the top of the pyramid with the wheels of his fiery chariot?

And what of the Ibis and other birds native to the area? Were they in danger of colliding with the pyramid the way american birds keep banging into the Empire State Building?

And as they were about to lay the first stone it might be discovered that the 13 acre site was the sole breeding ground for the Egyptian sand flea. Construction would then be halted pending a study to determine whether the sand flea could be trained to breed in another area. By the time the camel drivers hauling provisions to the site went on strike, my guess is the pyramid builders would have said 'the hell with it' and had King Khufu cremated."

As previously stated I have the unanimous support of the fishing industry in the Gulf States and our recommendations are that Public Law 93-205 be amended:

(1) To create a review board whose duty will be to review each species before it is placed on the threatened or endangered species list.

(2) That said board be required to produce a cost benefit ratio of placing this animal or plant on the endangered species list and that it must consider the impact on jobs, income and food.

(3) That said board be required to determine the biological significance of the loss of the animal or plant to the total bio-mass.

(4) The Endangered Species Act provides ample opportunity for citizen suits to classify an animal as endangered under Section 11(a). We would recommend that similar citizen suits be permitted to challenge classification of a fish, wildlife or plant in the same identical manner that the Secretary of Commerce or Interior can be prodded into action as set forth in the existing Act. We recommend a judicial hearing within the Federal Court System rather than one before an agency which made the interim classification and we suggest that attorney's fees be allowed those who would challenge the action as is presently permitted citizen suits under Section 11(a).

I shall be happy to answer any questions. Thank you.

Mr. LEGGETT. But I do want an opportunity to talk to the witnesses extensively again tomorrow.

Mr. DINGELL. Could I ask that TVA be brought in? It strikes me that they could add a great deal here.

Mr. LEGGETT. Counsel tells me that TVA does not want to testify, because they do not have a complete Board of Directors, and they do not know what their position is.

Mr. DINGELL. They can talk factually.

Mr. LEGGETT. I think we ought to bring all the members of the Board and their lawyers down here.

Mr. DINGELL. All we want to do is know the facts.

Mr. LEGGETT. Right, we are going to have to do that, and I would prefer that we not get solely involved in the Tellico Dam project.

If we can come back here tomorrow morning at 10 o'clock it would be very helpful, and the meeting will stand adjourned until then.

Mr. DINGELL. Mr. Chairman, that included TVA?

Mr. LEGGETT. We will call TVA, and see if we can get one of their representatives here.

[Whereupon, at 4:30 p.m., the subcommittee recessed, to reconvene at 10 a.m., Thursday, May 25, 1978.]

ENDANGERED SPECIES OVERSIGHT

THURSDAY, MAY 25, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT, OF THE
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:20 a.m. in room 1334, Longworth House Office Building, Hon. John D. Dingell (acting chairman) presiding.

Present: Representatives Dingell, Leggett (presiding), Oberstar, Hughes, Bonior, Forsythe, and Emery.

Mr. DINGELL. The subcommittee will come to order.

[Mr. Thompson's statement follows:]

STATEMENT OF HON. FRANK THOMPSON, JR., A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF NEW JERSEY

The Endangered Species Act of 1973 has been and continues to be one of the Congress most urgent statements of the human importance of biological diversity. As we said then:

"Consideration of this need to protect endangered species goes beyond the aesthetic * * * From all evidence available to us, it appears that the pace of disappearance of species is accelerating. As we homogenize the habitats in which these plants and animals evolved * * * we threaten their—and our own—genetic heritage. From the most narrow possible point of view, it is in the best interests of mankind to minimize the losses of genetic variations * * *. Sheer self-interest impels us to be cautious * * *. Our ability to destroy, or almost destroy, all intelligent life on the planet became apparent only in this generation. A certain humility, and a sense of urgency, seem indicated." (H.R. Rep. No. 93-412, 93d Cong., 1st Sess. 45 (1973)1.

The urgency remains, but we have finally started to make progress. In spite of restricted resources and a huge administrative burden, the Department of Interior's Fish and Wildlife Service appears to have compiled a hopeful record of maintaining and restoring threatened wildlife stocks, and protecting habitats.

Inevitably any effective law requires additional efforts by agencies which have other mandates. It requires thought and consultation in reviewing and reconciling public interests that may not previously even have been heard from. But ultimately we judge the federal government by its success and wisdom in protecting all our values, and Americans have always held wildlife as one of those important values.

As with the National Environmental Policy Act, this statute has been developing in its implementation and regulations over time. It has proved to be workable in hundreds of cases, and as it has become better known throughout the agencies, its effectiveness continues to improve.

Mr. DINGELL. This morning the Subcommittee on Fisheries and Wildlife Conservation continues its oversight hearings in regard to the Endangered Species Act of 1973. Our first witnesses are our good friends Mr. Tom Beville, our colleague from Alabama; Mr. John Buchanan from Alabama, accompanied by Mr. Chriss Doss, County Commissioner for Public Works, Jefferson County, Ala.; and Prof. John Moeller of the University of Alabama.

Gentlemen, we are most pleased to welcome you to the witness table. Would you please come forward.

I might mention that our good friend and colleague Mr. Bevill is well known and highly respected by this subcommittee, but for the purposes of the record if you would, gentlemen, each identify yourselves and your guests.

STATEMENTS OF HON. TOM BEVILL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA; HON. WALTER FLOWERS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA; AND HON. JOHN BUCHANAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA; ACCOMPANIED BY MR. CRISS DOSS, COUNTY COMMISSIONER FOR PUBLIC WORKS, JEFFERSON COUNTY, ALA., AND PROF. JOHN MOELLER, UNIVERSITY OF ALABAMA

Mr. BEVILL. Mr. Chairman, we appreciate this distinguished committee listening to us this morning.

[The statement follows:]

STATEMENT OF HON. TOM BEVILL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA

Mr. Chairman, I appreciate the opportunity to appear before you today to share some of my concern over the Endangered Species Act of 1973.

Mr. Chairman, when this legislation was before the Congress I supported it because I felt it would go a long way in calming the fears that existed over the direction man was moving in his effort to achieve progress.

Today, however, less than five years after its enactment it would be my conclusion that this Act is being used for a purpose that was never a part of the intent of Congress when it passed the Act.

This Act was seen as an important tool to help bring balance to national decision-making concerning economic growth and environmental protection. The effectiveness of this tool has been greatly reduced by the decision of the Sixth Circuit Court of Appeals in the recent case of *Hill vs. Tennessee Valley Authority* (snail darter), January 31, 1977. Given the Act, as interpreted by the Court, special interest groups could conceivably set out with confidence to stop any federally funded or licensed project currently underway or proposed in the United States.

The Sixth Circuit Court of Appeals has interpreted the language of the Act as being absolute and totally inflexible. It recognizes no balance in the Act's language whatsoever. Given their interpretation, if a federally authorized or funded project is in conflict with a listed species or its critical habitat that project must be halted unless the Congress specifically exempts it or its habitat or the Secretary changes the status of the species, which under the Act he has the authority to do providing certain conditions are met.

It would certainly appear that the Congress did not intend for the Act to be considered under such narrow guidelines when you consider the general, technical, and scientific realities that exist in the world. Consider these points:

A species is any group of organisms with common characteristics which breeds separately. The difference between species is frequently slight and recognizable only to persons specifically trained in a given field.

Scientists have identified about 2,000,000 separate species of living organisms (1.4 million animals and 600,000 plants). New species are being identified constantly—more than 10,000 new species are being discovered and described each year, and most scientists would probably agree that the current number for all existing species could be as high as 5,000,000.

There are more than 600 currently described species of fresh water fish in the United States and Canada alone, and 116 of these are known darters.

On the substrate of a river, the rich soil of a corn field, on the floor of a forest, there may exist many thousands of different organisms often representing hundreds of species.

Species are constantly evolving from common ancestors. Over the ages, far more species have passed out of existence than are currently living on earth.

Many living organisms have very limited ranges. It is conceivable that every river, every hillside, and every field could harbor an undescribed and perhaps unique species.

The Department of the Interior reports that there could be 200,000 "full" species plus as many as three to five times that number of additional sub-species and individual population that needed listing and protecting as threatened or endangered worldwide.

With these scientific realities it becomes very clear that the progressive development of this nation stands in jeopardy, given the current application of the Endangered Species Act. Should there be any doubt about the motives of some in their usage of the Act, I would like to quote the Secretary of Interior when he appeared before the Public Works Appropriations subcommittee of which I am privileged to chair: "With the endangered species list there is no question that it is being used in some instances to bring a judicial halt to a project. The problem is not with the endangered species but with the people and the project involved. That is an instrument by which they use to bring the projects to a halt."

The Tellico Dam project in Tennessee is the nations most obvious example of people using the Endangered Species Act to stop a project. The species used to stop this project was not placed on the endangered list until 1975—when Tellico was about 75 percent complete. Through FY '78 Congress has appropriated \$117 million of taxpayers money. We have studied and re-studied this project and have instructed TVA to complete the project as designed.

Mr. Chairman, it is my opinion that when this Act is used in the way the Secretary of Interior described to stop a project that is within a few days of completion, after spending \$117 million of the taxpayers money and depriving citizens a supply of enough electricity to heat 20,000 homes, I can think of no stronger message. It is time the Congress takes another look at the Endangered Species Act and this time to keep in mind that man himself is a species, and it is our responsibility to insure that his future and welfare is taken into consideration as we go about the business of protecting species.

Mr. BEVILL. Mr. Chairman, I am going to make a brief statement. I have a prepared statement that is submitted for the record and I just want to urge this committee to please take some action to stem the tide that is flowing now. As you know, we in the Congress, including myself, supported this Endangered Species Act to protect the bald eagle and some of those endangered species, and now we find ourselves in the position that it is being abused.

When I say that, I am quoting the Secretary of the Interior who appeared before my appropriations subcommittee, as he does each year. He frankly stated very honestly that the act is being abused, so it is obvious that remedy is needed. It is obvious that the Department of Interior is not taking the necessary action.

I am going to mention the snail darter which seems to be the landmark case. The Tellico Dam into which we put \$117 million is sitting there dry, ready to be filled. The dam was 75 percent complete when somebody comes up: "Ah, we found a snail darter." Nobody had ever heard of the snail darter. We had not looked anywhere for the snail darter but we found one. The argument was made a few days ago before the Supreme Court. The Attorney General of the United States appeared on behalf of the TVA in this case. I listened to the testimony. You are going to really have to set this up where this committee or somebody other than the Department of Interior is making the final decision on what item goes on the endangered species list because it is obviously not going to work under the present arrangement in my judgment.

We have this dam sitting there. The testimony before my committee says this dam would hold enough water to furnish electricity for 20,000 homes. It is sitting there dry—not because of the U.S. district court that heard the testimony. They threw the case out.

Actually, the people from Fish and Wildlife could not pick out which one of the three fish in the bottles was the snail darter, so the judge threw it out. But the U.S. Circuit Court of Appeals, who just read the record, never heard any witnesses, stopped it. So there it is now, stopped, just sitting there.

These good-meaning people are going to destroy this country if we do not make some changes in this law. We are talking about energy, we are talking about the economy, and we are talking about water.

We have an energy problem that the chairman is very familiar with.

Mr. DINGELL. I am modestly familiar with it.

Mr. LEGGETT. Will that snail darter case be decided by the Supreme Court this session?

Mr. BEVILL. Probably this summer. Of course, the Congress did not anticipate that one of the departments of the government was going to take the position that everything has to stop because of these endangered species. We can just jump around all over the country. It is spreading. I do not know what the Supreme Court is going to do.

We passed the law here in the Congress and we could not anticipate that it was going to be abused. But as the Secretary of Interior said, it is being abused. The L. & N. Railroad has filed a suit against the Tombigbee. You can imagine how much interest the railroad has in an endangered species.

Mr. LEGGETT. What did the Secretary of the Interior say?

Mr. BEVILL. That the act was being abused. The gentleman from the Fish and Wildlife Services was very honest. I heard part of his testimony yesterday. I believe he is the director of the service. The chairman asked, "Would you support this Tellico Dam down there if this snail darter was taken off the endangered species list?"

And he said personally he wouldn't, as I recall his testimony.

Mr. LEGGETT. I think he is just against dams.

Mr. BEVILL. This is the idea, you see. Let me point this out to you gentlemen. We have to represent the people. I do not know of a single elected official in this country that is advocating blocking dams in these public works projects because of some fish. It is nice to preserve the snail darter. I have shown more love for the snail darter than any man in this country.

We put \$2 million in there just to move that fish to a place of safety where it could reproduce. It has been moved. The scuba divers went down, caught them. Of course, as I pointed out to the Secretary of Interior when he was before my committee, you all took some nets down there, it was not intentional but the nets killed 98 of them. Those snail darters have been moved.

Red Wagner recently relied chairman of the TVA whom I think would be as close to this situation as anybody. He spoke the other day and he points out instead of having just 800 that we started with, less the 98 that the Department of Interior killed, we have about 1,500 snail darters in another location. But that dam is sitting there. It ties into our economy, ties into our energy needs. It is obvious. Please do something to get control of this situation. These well-meaning people are going to dry this country up. We have the greatest water resource system in the world. The people

all over the world call for our Corps of Engineers to help them develop their water resources.

Mr. DINGELL. Maybe you could inform me of something. As near as I can gather, you are telling me the Endangered Species Act is being complied with but it is being misapplied. I understand it is the courts that are holding up the construction of the dam. As near as I can gather, you are telling me the snail darter is now being protected. I really am curious although as to what is the problem and who is making the problem?

Mr. BEVILL. The Department of Interior, I am sorry to say, is contributing to this situation because they have the authority under the act to take the species off the endangered species list, but they are not going to do that.

Mr. DINGELL. Are you quarreling with whether the animal is on the endangered species list or are you quarreling with the fact the courts are saying because it is on the list the construction of the dam cannot go forward? I am not sure the Department of Interior can exercise judgment as to whether the animal goes on the endangered species list or not, but I think the courts do have a judgment as to whether section 7 of the act has been complied with, and I gather that you are telling me that the courts are not complying with the law.

Mr. BEVILL. As I understand the law, we in the Congress gave the Department of Interior authority to place species on the endangered species list.

Mr. DINGELL. Maybe we ought to gain some perspective on this matter. You ought to tell me whether you favor exterminating different species of animals.

Mr. BEVILL. No.

Mr. DINGELL. Having established that, ought we now move to the next question to figure out who it is that is creating the problem? Are you denouncing Interior?

Mr. LEGGETT. If the gentleman would suspend, I would like to recognize Congressman Flowers of Alabama.

Mr. DINGELL. You can recognize him if you like.

Mr. LEGGETT. We are going to recognize Mr. Flowers, who wants to make a short statement out of order because he has a meeting to attend. The Chair recognizes our very distinguished colleague with all the appropriate accolades we normally give.

STATEMENT OF HON. WALTER FLOWERS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA

Mr. FLOWERS. You can add that for the record later, Mr. Chairman.

My dear friend John, with whom I work for and against on occasion, it is always a pleasure. I do appreciate your letting me say a word. I might describe a little redistricting problem back in Alabama right now. I have some thought about trying to make the whole State my district and I am somewhat involved in that at this point, but I want to voice my concern just like my dear friend and neighbor, Tom Bevill, and another dear friend and neighbor, John Buchanan, will shortly.

We have a specific problem in Alabama.

Mr. LEGGETT. I am the chairman.

Mr. DINGELL. I will just observe I sit here by sufferance of the chairman. While I sit here by sufferance, I am the chairman. I do not want anybody having any doubts about that matter.

Mr. FLOWERS. I want to represent all of my people. I think we have a problem here. I do not know whose problem it is but it is an American problem, that we have a law that was placed on the books by the Congress of the United States and I voted for it just like my colleagues behind the rail up there did. It was intended to protect species of animals from extinction, to make sure that down the line we would not have an end to the hippopotamus, or maybe we were thinking even about the snail darter when we wrote that law. I am not sure. But I do not believe that the Congress of the United States, representing the people of the United States, intended that law be used to cut off, impede, inhibit reasonable progress in this country, particularly when you face the enormous problems that have only come to bear in the last few years. The situation was never what you might say good in terms of natural resources and availability of energy and whatnot, but it is worse now.

The endangered species list, that enormous stick that the Department of Interior has over progressive public works projects that mean jobs, that mean energy or environmental protection like the waste-water treatment in the dumping of cleaned-up wastes into certain drainage areas, has to be exercised with judicial reason and caution.

I am not saying that everybody is wrong in Interior. Certainly I am not saying everybody is right. I think this committee and this Congress has an obligation to look at this thing and see whether we might not improve the situation.

Running through central Alabama there is a small river of great historical importance with which I am eminently familiar. It is called the Cahaba River and flows from the Birmingham area down through the southern central part of Alabama. It goes back to prehistoric time as far as our area is concerned. It derives its name from the Indians. I have canoed on that stream, I have politicked on the banks of it, and I love it. It is a necessary recreational area, it is important environmentally in our central Alabama region, but it is also necessary, absolutely necessary, that some reasonable amount of development along the banks of that stream—I do not mean right up at the top of the hill but in the flood drainage area of that stream—take place.

If we do not allow that, the growth of central Alabama will be impeded for the foreseeable future.

We ask respectfully that you hear us out. We have our witnesses who have the facts a lot better than I do. I would appreciate very much you letting me speak these few words.

Mr. LEGGETT. I thank the gentleman very much. The Endangered Species Act is an important piece of environmental legislation and we intended that it be administered with a good measure of good sense. What happens is that when various people are implementing legislation, many times the results are far askew from the directions which Congress originally intended.

We have a strange situation today. On television last night a show considerably burlesqued the bill in that apparently a large portion of some of our major military installations are off limits for

military activity because they are critical habitat for endangered woodpeckers that we talked about yesterday. I know we can indulge in abatement in utilization of bases during time of peace, but certainly were we at war and were we preparing Marines to go to battle we would be making accommodations to see that they received proper training.

I think we have to interpret this law with a degree of balance. Balance may be in one direction in the eye of some Members of Congress and in another direction in the eye of some members of the administration, but we just cannot have an open and shut program.

Mr. FLOWERS. Mr. Chairman, we all noticed the story several weeks ago about the spring out at the zoo here in Washington where they found some little shrimp-like creatures that apparently were unique, and they were about to be placed on the endangered species list so they could propagate and enlarge their numbers.

I could not help but think if we take that to the logical conclusion or extension, I understand we have a problem with the panda bears that we got from the People's Republic of China several years ago. They are having trouble mating and it is not working out in our environment.

Mr. LEGGETT. That is a matter of public record, I understand.

Mr. FLOWERS. In other words, there is more birth control going on out there than we might want, zero population growth in the panda bear cage, and we would like to have some native-born panda bears. How are we going to accommodate that situation? Are we going to have to create an environment that will make it work, because they are definitely, as far as the Washington Zoo is concerned, an endangered species right now. That is just my observation.

Mr. LEGGETT. Thank you very much for your commentary.

Mr. BEVILL. If I may proceed, Mr. Chairman. As I was pointing out, this country has the greatest water resource program in the world but yet we have people in northern California coming before our committee, because of the drought, having to ration their water. At the same time Pennsylvania is having floods. So we still have much work we have to do in this country and we cannot do it.

To answer your question, Mr. Chairman, what is the problem, the law is a good law but obviously it is as the Secretary of the Interior stated before my subcommittee, being used to stop projects.

Mr. DINGELL. You tell us it is being abused. Do you complain about species whose population is approaching extinction being listed on the endangered species list? Is that your complaint? Answer yes or no.

Mr. BEVILL. Putting things on the list that just say this is a snail darter—no one ever heard of it before.

Mr. DINGELL. Do you quarrel there is a snail darter?

Mr. BEVILL. I quarrel with the fish 3 inches long that was never heard of before, but after a dam is 75 percent complete they come in and block that dam.

Mr. DINGELL. Let's try to get this in perspective. The point I am trying to figure out is what is the problem. You have a series of steps—are you complaining about the listing, or are you complaining about what happens after the listing?

Mr. BEVILL. Both.

Mr. DINGELL. It strikes me that you are arguing about a fact whether it is endangered or it is not endangered. Do you object to the animal's presence or do you object to the listing of the animal or do you object to the fact they put the animal on the list or do you object to the fact that after these matters have been attended to the courts say the dam cannot be constructed?

What I am trying to figure out is what is your problem so that if there is a problem we can identify who is doing the bad job and then we can do those things that are necessary to rectify this situation without necessarily wiping out the whole population of animals.

Mr. LEGGETT. I believe what the gentleman means is that we will have to keep in mind the testimony that was brought up yesterday.

Mr. DINGELL. Was there not a complaint about the listing in yesterday's testimony. The courts are the people holding up the dam.

Mr. BEVILL. I really would like to wind up. Actually, I did not want to get into this argument, which came first, the chicken or the egg. I am telling you what the problem is. The problem is that this law is being abused, and that is undisputed.

Mr. DINGELL. Who is doing the abusing?

Mr. BEVILL. The people who placed the snail darter on the list and have the authority to take it off.

Mr. DINGELL. Are we under the 5-minute rule?

Mr. LEGGETT. The Chair is making a statement at this point. I will state that the record from yesterday is amply clear that the Fish and Wildlife Service did not advise TVA and/or the State of the ramifications of listing the snail darter's critical habitat at the time it was created, resulting in the termination of the Tellico Dam project. Considering the fact that Federal action was taken affecting another Federal agency, after investment of some \$35 million had been made in the project at the time the snail darter was discovered, and an additional \$25 million investment had been made in the project prior to the time that the critical habitat was designated, with no evidence whatsoever of any advice to TVA that the effect of that designation would abate the project, I do think this supports the Secretary's determination and testimony before the Public Works Committee that there is massive abuse in the administration of this act. That is the Chair's view. It may well be that some of the members of this committee have other views.

Mr. DINGELL. That is correct.

Mr. LEGGETT. That is my view and I make that just as an observation. The Secretary made the statement that he is against the dam whether or not the endangered species issue is present. That does indicate to the Chair that there is some shading of views in making determinations and promulgating the regulations.

Mr. BEVILL. This is certainly the case. The witnesses before my committee have shown that the act is a good act, the Congress passed a good law, that it is being abused, and it is obvious and nobody disputes that. The L. & N. Railroad, would tell you they were not interested in the endangered species; this is a competition matter for them.

What I am asking of this committee is please do something as an oversight. This is our responsibility as Members of Congress to oversee the laws we pass, and if they are not working, as Congress intended, then corrective action must be taken.

I do not know what the answer is to it. I just say I hope you will inject something and make changes where the intent of Congress will be cleared up. I agree with the chairman we have to have some balance. We cannot go out and build dams everywhere. All the laws we passed are adequate to protect the environment. I urge you to do something. These gentlemen have a problem. It is going to paralyze this Nation if we do not do something about it.

Mr. LEGGETT. Thank you very much.

The subcommittee will stand adjourned until the Chair returns.

AFTER RECESS

Mr. LEGGETT. The meeting will please come back to order.

I understand we have the Canadian fisheries agreement on the floor at 12:15. I hope that doesn't exasperate everybody, but that is a problem of running this Congress with the multiple shows that are taking place. I had to speak just now over at the National Advisory Committee on the Oceans and Atmosphere and that was an important business activity, also. I think we have them properly motivated in some directions that should be helpful for everybody.

I think the proper thing at this point would be, No. 1, make sure somebody calls the distinguished former Chairman of this subcommittee, Mr. Dingell.

We are obviously dealing with a subject which has some degree of emotion attached to it, and so it is going to take some time to hear it. I had hoped that maybe I could avoid the Tellico Dam issue, and I have tried to avoid it for a long period of time, but inevitably it seems to kind of be thrust upon the subcommittee, so we are going to rather carefully go into exactly what has occurred. I am not going to retry the case, but we want to go into the matter in as much detail as is necessary and I want to recognize all of my colleagues.

Tomorrow I have to go up to the U.N., but we will be back on the June 1st, and if we have to schedule additional time in June, we will do that. The committee has reported the Endangered Species Act reauthorization and under the current status of the law I would be afraid to bring that bill to the floor under suspension. To bring it to the Rules Committee would require that we know a little bit about where we have been and where we are going with regard to the Act.

Inevitably, that law would be subject to amendment and I can see all kinds of situations arising there. So, anyway, I don't want to get in any scraps with my colleagues. We all have different views and we have to synthesize the facts and develop them as carefully, coolly and as deliberately as we resolved the Alaska lands issue. I believe it can be resolved to everybody's interest and advantage in that way and nobody really should be leaving the hearing room out of a fit of frustration. I am certainly not going to read the riot act myself to any Federal agency representatives administering what appears to them to be the plain meaning of the law.

What we have to do is look at what has occurred, determine whether or not it is reasonable, whether it was congressional intent, and whether or not we want to effect any modifications. We are going to hear everybody who wishes to testify, and inevitably this Committee will make decisions. It may be in accord with the Senate or it may be along a different line, but we will try to get all the evidence in.

We will try to get some better attendance from the Members of the Subcommittee.

Mr. Forsythe, do you want to be recognized at this point?

Mr. FORSYTHE. Well, Mr. Chairman, with the time situation we are in, there are only a few minutes before I am going to have to leave for the floor on the Canadian situation. I expect you are going to want to be there too.

I am wondering if we could have one of your colleagues here who could start the hearing?

Mr. BUCHANAN. Mr. Chairman, may I make a request?

Mr. LEGGETT. Surely, Mr. Buchanan.

Mr. BUCHANAN. As you know, we do have some matters to discuss which fortunately, do not, pertain to the Tellico Dam dispute or the *Snail Darter* case, and I have the distinguished Commissioner of my county here and Dr. Moeller, to help me present to you a problem we have. If we can get up to bat today, we would like to do so, but we are willing to work with the committee in any way you see fit, Mr. Chairman.

If you want to recess for a time and let us come up to bat a little later, we will do so. If you want us to proceed, we will do that. But it will take a little time to make our case, and we believe it is one that the committee could well hear, and we would appreciate your hearing it.

Mr. FORSYTHE. Mr. Chairman, I would urge that we recess until 1:30 p.m.

Mr. LEGGETT. I know the gentleman has to be on the floor, and I have to be on the floor. The audience has been attentive. Your testimony is going to take more than 7 minutes, I presume?

Mr. BUCHANAN. Yes, sir.

Mr. LEGGETT. I think then what we should do is adjourn until 1:30 then I have the afternoon free. I can go late tonight as far as that goes.

Mr. BUCHANAN. I thank the Chairman very much.

Mr. LEGGETT. But, believe me, everybody who wants to be here on this issue is going to be heard, whether they are from industry or from environmental groups, or whatever, and we will get to the bottom of whatever we need to review.

So we will adjourn until 1:30. It will be helpful if counsel could advise Mr. Dingell of that.

The subcommittee will stand adjourned.

[Whereupon, at 12:05 p.m., the hearing was recessed, the subcommittee to reconvene at 1:30 p.m. of the same day.]

AFTERNOON SESSION

The subcommittee resumed at 1:30 p.m., Hon. Robert L. Leggett (chairman of the subcommittee) presiding.

Mr. LEGGETT. The meeting, will please come to order.

At this point we will include in the record the statement of our distinguished former colleague, Governor Ray Blanton of the State of Tennessee, giving his views on oversight at this point, particularly related to projects within his State.

[The information follows:]

STATEMENT OF HON. RAY BLANTON, GOVERNOR OF THE STATE OF TENNESSEE

Mr. Chairman and members of the Committee: As Governor of the State of Tennessee, and as a former member of congress, I am much concerned about the inflationary effect which results from the administration of the Endangered Species Act, U.S.C., Title 16, § 1531, et seq., and also the inflationary effect of various other environmental regulations. The Endangered Species Act is substantially hampering and delaying important federal projects which involve Tennessee, including the TVA Tellico Dam, the TVA Columbia Dam, and can delay completion of the Tennessee Tombigee, Corps of Engineer project and others. These projects are all important to the State and as Governor I have actively supported and urged the rapid and expeditious completion of each.

At a time when inflation is the major problem facing our country, it seems ironical to me that the Congress would allow to stand regulations, which beyond any question greatly increase the costs of projects such as the above, and otherwise are extremely inflationary. In connection with the Tennessee projects, there is no real evidence that the species which have been put on the endangered list, or proposed to be put on the endangered list, are of any material significance. Certainly the importance to the public of the rapid completion of these projects and other similar projects throughout the country is of greater importance than the protection of insignificant and unimportant species.

The Fish and Wildlife Division of the Department of Interior in administering the Act and the Courts, so far in construing the Act, have not in my opinion given adequate consideration as to whether or not the species are of value or consequence. In the construction of the Act no weight has been given to the economic and other effects of putting species on the endangered list. The people of Tennessee do not understand how Congress can continue laws and regulations which will so adversely affect the people of this State.

As a former member of Congress, I cannot believe that Congress ever intended the Act to have the adverse affect which it is definitely now having. To me the Act does not make either environmental or economic sense.

I respectfully urge that there should be and must be substantial revisions to the Endangered Species Act which will allow completion of the above referred to important projects and which will not shackle such projects in Tennessee and other States with an almost impossible regulatory hurdle, resulting in delays which are costing the government and the taxpayers so much money. As Governor, I urge you to bring order and common sense out of the chaos that exists in both the Endangered Species Act and many EPA and other regulations. We must not so shackle the operation of government agencies.

Surely, amendments to this Act and other environmental laws which will co-ordinate them with funding of federal projects are very badly needed, and I urge Congress to expeditiously make substantial changes and do away with undue regulations. If substantial amendments which will co-ordinate the Act with the funding of federal projects cannot be rapidly passed (and I hope they can), it is my view that projects, that were started before the Act was passed, should be granted a specific exemption. At the very least in my opinion the States should be consulted and have a final right to determine what species are put on the endangered list in their respective States.

Thank you for your consideration.

RAY BLANTON,
Governor of Tennessee

Mr. LEGGETT. In addition, we will include the statement of Kathleen Kepner, Conservation Chairman of the Michigan Cactus and Succulent Society.

[The information follows:]

STATEMENT OF KATHLEEN KEPNER, CONSERVATION CHAIRMAN, MICHIGAN CACTUS
& SUCCULENT SOCIETY

Rather than laying to rest problems arising out of the application of Section 7 of the Endangered Species Act, it now appears that the decision of the U.S. Court of Appeals of the Sixth District enjoining the closure of Tellico Dam (Hill v. Tennessee Valley Authority) has opened up further questions with respect to public policy. The court took the position that their responsibility was to apply the law as they found it thus leaving to the other two coordinate branches of government, the executive and the legislative, "sufficient opportunity to grapple with the alternatives."

Advocates for the protection of the plants have a special interest in the workability of Section 7 because preservation in habitat is generally considered to be the best means for ensuring the survival of endangered and threatened plant species. Yet, we recognize that the listing process which triggers "fullest protection" including the mandates of Section 7 has prevented the formulation of a meaningful plant conservation program at the federal level. On April 26, 1978, final rules were issued by the U.S. Fish and Wildlife Service listing eleven plant taxa as endangered and two as threatened, a complement to the other four plant taxa previously listed. We were informed that henceforth permits would be required for these plants. None of these appear to be commercially exploited. In fact, *Dudleya traskiae* is being eaten up by rabbits and the Hawaiian *Vicia menziesii* is being menaced by the goats, neither of which we expect will take out a permit. In the meantime, the Endangered Flora Project, Smithsonian Institution published their second report listing 3,253 plant taxa as endangered or threatened. This compares with the 1975 listing of 3,187 taxa reported in 1975.

What is the problem?

The Senate Subcommittee on Resource Protection held oversight hearings on the Endangered Species Act in July 1977, and these hearings encompassed a very broad spectrum of opinion including the views of state officials. Considerable attention was given to problems arising out of Section 7.

A basic question pursued at the July hearings was how do you reconcile conflicts of interest that have not been successfully resolved by the administrative and judicial processes of government? In general, the administrative officials took the position that the law should not be amended but instead each irreconcilable conflict should be passed on to the Congress for a case-by-case review. The argument was advanced that the Congress as the representatives of the people is better able to resolve such conflicts of interest. The reasoning was that the Congress had authorized the construction of Tallico Dam as well as the mandates of Section 7 which provides that federal agencies shall not jeopardize the continued existence of endangered and threatened species or destroy or modify their critical habitat.

Several Congressional critics expressed the view that it is inappropriate to ask the Congress to serve as an appeals body for unresolved administrative cases even if such appeals were on a ratio of 4,500 successful consultations to one. The suggestion was made that if the administrative agency could not utilize their powers to resolve such conflicts, another mechanism could be established by the Congress for the purpose of conflict resolution.

It should also be noted that judicial remedy for reviewing the listing process is limited. The U.S. Court of Appeals said that "Nowhere in the Act are courts authorized to override the Secretary by arbitrarily 'reading' species out of the endangered list or by redefining the boundaries of existing habitats on a case-by-case basis."

The problem is further exacerbated by apprehension about the impact of the Tallico Dam decision on public works projects in general. In finding the Secretary's interpretation of the Act as reasonable and consistent with the courts interpretation, the U.S. Court of Appeals said "we see positive benefit to be gained by impressing his criteria with a judicial imprimatur. This will expedite the adjudication of future cases as well as assist the Secretary in achieving a uniform federal conservation posture with minimal reliance upon the courts."

Under Section 11(g)(A) of the Endangered Species Act any person may commence a civil suit on his own behalf "to enjoin any person, including the United States and any other governmental instrumentality or agency (to the extent permitted by the eleventh amendment to the Constitution), who is alleged to be in violation of any provision of this Act or regulation issued under the authority thereof."

There are some who fear that this provision puts a powerful legal weapon in the hands of anybody who for one reason or another dislikes a public works project. Dr. Edward C. Raney, Professor Emeritus, Cornell University, submitted testimony to the Senate Subcommittee that undescribed species of aquatic organisms exist in

much of the United States particularly in the Southwestern part of the United States which had been unaffected by the Pheistocene glaciers. He believed that he could take twenty or so experts in the various fields of aquatic biology and describe new species from almost any locality.

It is doubtful that many serious students of government would mistake adversary proceedings which are spotty at best and narrowly confined to the interests of the contesting parties as a substitute for the more long range benefits of governmental programs such as land use planning, acquisition or dedication of areas for preservation, selective strategies designed to restore and recover endangered species, etc. Indeed, it would appear that the consequences of "no fault" are being felt in many fields of endeavor.

What is to be done?

One alternative available to Congress is to establish a small independently funded agency whose job would be to act as an independent critic. The value of such an agency in regulatory proceedings is described by James C. Miller III, former assistant director of the Council on Wage and Price Stability in an address delivered to the American Management Association, December 2, 1976, entitled "Regulatory Reform: Some Problems and Approaches". He gave many practical suggestions and concluded his remarks with the following recommendation:

"Finally, on a related note, it is highly desirable that an outside critic be funded and participate in major regulatory proceedings. On a limited scale, the Council on Wage and Price Stability has played this role, having intervened before a score of agencies. In the future that role could be played by the Council, an Agency for Consumer Advocacy, and/or some other governmental or government-sponsored instrument. While we have not observed that agencies are inclined to modify regulatory proposals just because of our criticism, we do have evidence that the bureaucrats wish to avoid having us criticize their work and therefore are improving the quality of their initial proposals."

The establishment of such an agency to undertake public policy analysis could be justified solely on the basis of the apparent insularity of the endangered species program from the mainstream of public administration and from thoughtful, innovative and imaginative thinking about how to produce a result. Progress cannot be made without criticism and unfortunately so many of the friends of this program have not been able to provide the kind of constructive criticism that is necessary to advance progress in this work. All too often attention has been given to form instead of substance and this is also the usual concern of regulatory agencies.

Professional reporting by an independent agency could serve the Congressional interest in reviewing management and policy considerations. There is also a need for government experts to examine scientific recommendations such as those contained in the Smithsonian Institution's report to Congress for the purpose of exploring the possible options for governmental implementation. It is not an easy task to translate the knowledge of science and technology to governmental principles and practice and fit them into the framework of our democratic processes. It is also important to understand the limits of scientific knowledge.

If left on its own without any outside input, the endangered species program is likely to go far awry unless course corrections are made from time to time.

Problems with cost-benefit

Some have advanced the idea that public works projects and endangered species can be weighed and balanced by undertaking cost-benefit studies. The notion is that this would provide a means to measure the relative value of each so that a choice could be made. We do not believe any meaningful comparisons can be made by the use of this method. The plants, for example, have a current value but also a prospective value which may be unknown. Relatively recent discoveries of the jojoba plant as a source for oil and the guayule plant as an alternative source for a rubber supply are good examples. Moreover, there are often great errors made in estimating the costs and benefits of public works projects. There is probably no better illustration than the rapid transit systems where the costs of construction and operation have been grossly underestimated and the usage grossly over estimated.

Mr. LEGGETT. And in addition we have a statement from Lon MacFarland on behalf of the Upper Duck River Development Agency from Shelbyville, Tenn.

[The information follows:]

STATEMENT OF LON P. MACFARLAND ON BEHALF OF THE UPPER DUCK RIVER DEVELOPMENT ASSOCIATION, THE UPPER DUCK RIVER AGENCY AND THE UPPER DUCK RIVER PLANNING COMMISSION

Mr. Chairman and members of the committee: I represent the Upper Duck River Development Agency and the Upper Duck River Planning Commission which are agencies created by the State of Tennessee for the development of the Upper Duck River. The Upper Duck River flows through Bedford, Coffee, Marshall and Maury Counties, Tennessee, on its way to the Tennessee River.

From about 1960, many people in this area have worked with TVA to develop this project. It is a very necessary one, and is the key to the development of the area since it will provide flood control, improve water quality, expand recreational facilities, afford a very necessary water supply, and will enhance the job opportunity in this area.

The Duck River is one of extremes. There are frequent floodings and in the dry season the flow is very small which results in a very questionable water supply for the area. The wells throughout the area are more than 80 percent contaminated and unfit for use. The Normandy Dam and reservoir was completed in 1976. The Columbia Dam was started in 1973, and is now more than 35 to 40 percent complete with the concrete work on the dam practically finished, so that it is contemplated that water will flow over the concrete structure in 1978 when the present river diversion channel is removed. The entire project is approximately 50+ percent complete. Numerous tracts of land have been purchased for the Columbia reservoir, approximately 8,000 acres out of 27,500 acres total. The project has had wholehearted local support and the support of the Conservation Commissioner, the Governor, the Legislature, Senators Sasser and Baker, Congressmen Beard and Gore, and many others.

The water systems of the five cities in the area have entered into a contract with the Agency and TVA to repay to TVA and the government \$16,200,000 as a local contributor to water supply. To accomplish this, the five water distributors in the area have charged 5 cents per 1,000 gallons of water sold and pay these funds monthly into a trust fund for the repayment of the \$16,200,000. Under the contract between the Agency, TVA and the five cities approximately \$1,600,000 has already been paid into the trust fund. At the same time another contract was signed between the Agency and TVA under which the Agency was obligated to promote \$50,000,000 in non-federal area development projects. In this connection the local and private sector have demonstrated their good faith in the Duck River project and already the water system expansion amounts to \$9 million; waste water system expansion \$3.38 million; new and improved roads more than \$13 million; and private industry development in excess of \$48 million, for a total of more than 60 million dollars. Testimony has been presented before Appropriation Congressional Committees relative to the appropriation for the fiscal year 1979, and the President has recommended in the 1979 budget additional expenditures for the project.

It is our understanding that Congressman Leggett's Subcommittee on Fisheries Wildlife Conservation and Environment are on May 24, 25, 26 review the Endangered Species Act.

It is our further understanding that the "Tellico" case *TVA v. Hill, et al.*, No. 76-1701, will probably be argued in the United States Supreme Court on April 18. Whatever the Court's decision in that case it is obvious that the Endangered Species Act needs amending to make common sense which the public can understand.

A problem facing this project is the application of the Endangered Species Act, USC Title 16, Section 1531, et seq. This Act passed in 1973, long after the project started, allows the Secretary of Interior, after consulting with affected States, interested parties and organizations, to determine endangered species. Although we are interested parties and organizations, we have never been consulted in this regard. Mussels and several snails, etc., have been put on the endangered list. The mussel is a subspecies of many mussels. We are advised that as to the species listed one is no longer in the reservoir, another has been successfully transplanted below the impounded area, and all exist in other streams. There is no evidence that the mussels or snails are of significant consequence. We respectfully suggest that the Endangered Species Act needs substantial revision because the Act as it has been construed by the Court gives no consideration as to whether or not the species is of value of consequence and the construction given the Act does not provide for any weight to be given to the economic and other effects of putting species on the endangered list. Yet, the Fish and Wildlife Service of the Department of Interior in the administration of the Act, can put an inconsequential species, such as the snail darter, on the endangered species list, declare a critical habitat and this will have

the capability of stopping any project, no matter how worthwhile or beneficial, as was the result at the TVA-Tellico project.

We likewise respectfully suggest that the placing of a species on the endangered species list and the subsequent declaration of a critical habitat is a "substantial federal action". Under NEPA, a "substantial federal action" which will affect the human environment requires an Environmental Impact Statement to be filed. An Environment Impact statement was required before the Duck River project could be started. Certainly an Environmental Impact Statement is required when an endangered species is listed and a critical habitat is declared; since if the effect of this is to stop a major federal project, it unquestionably is a substantial federal action affecting the human environment. A suit *Pacific Legal Foundation et al. v. Cecil D. Andrus et al.*, No. 77-1054-C-CV, is pending in the U.S. District Court for the Middle District of Tennessee. The suit questions the legality of placing species on the endangered list without a NEPA statement.

The Endangered Species Act, as it has been interpreted by the Sixth Circuit Court of Appeals in the snail darter case (*Hill v. TVA*) has turned the statute into an absolute and inflexible command that precludes balanced decisionmaking. This interpretation places the need of the species always above the needs of man which sometime requires development of all or a portion of the resources which a particular species inhabits. We are concerned that the important Duck River project could be halted because of the listing of insignificant species.

We respectfully suggest that there should be, and must be, substantial revision to the Endangered Species Act, which will allow a sensible weighing of values. We do not suggest that the Act be done away with, but do suggest that the administration of the Act as it has been construed and administered does not reflect the true intent which Congress had at the time of enactment. So as to bring order and common sense out of the chaos which now exist, we suggest that amendments to the Act which would co-ordinate the Act with the funding of federal projects is very badly needed, because we do not believe that Congress ever intended the Endangered Species Act to have the disruptive and chaotic effect of federal funding of projects that it now has. Section 7 of the Act should be amended in order to restore its original purpose of providing balance between preserving endangered species and economic growth and development. The complete inflexibility of Section 7 and other problems of the Act should be corrected before legislation is enacted this year. We believe that such amendments could be done in a number of ways, such as

1. The Alaskan pipeline exemption.
2. An amendment to Section 7 of the Act, 16 USC § 1536 (Interagency Cooperation) by inserting after the word "action" and before the word "necessary" in the eighth line "to the maximum extent practical and consistent with the agency's statutory goals".
3. Specific exemptions.
4. Exemptions of projects started before the enactment of the Endangered Species Act, and numerous others.

We therefore urge that Congress give serious consideration to amendments to the Act so that it will be co-ordinated with and will not disrupt federal funded projects, including the Columbia dam and reservoir, as well as projects throughout the Nation.

UPPER DUCK RIVER DEVELOPMENT AGENCY,
Shelbyville, Tenn., May 18, 1978.

Re Enangered Species Act—Inflation.

HON. ROBERT L. LEGGETT,
Chairman, Subcommittee on Fisheries Wildlife Conservation and Environment,
Washington, D.C.

DEAR MR. LEGGETT: The Endangered Species Act and its administration has been inflationary. We understand that 52 major public works projects in the United States are currently affected by the Endangered Species Act. It is estimated that the cost of these projects will be substantially increased as a result of the possible delays brought about by the administrators of the Endangered Species Act.

Furthermore, the private sector of the economy is directly or indirectly affected by the Endangered Species Act. Their inconvenience, delay and increased costs are passed on to the consumers.

May I point out a few absurd examples of how the public has been affected by the administration of the Endangered Species Act: 1. Because of about 800 or 900 Snail Darters, the Tellico Dam has been stopped for a year. The result in a period of

energy crisis the public has been denied hydro-electric power that would have supplied 20,000 homes; and 2. The Duck River Project is under threat from the administrators of the Endangered Species Act because 45 subspecies of Mussels exist in the reservoir area of the Columbia Dam, although the same subspecies have been transplanted in a habitat below the affected area and exist elsewhere in the Clinch and Powell Rivers of Tennessee. The Congress is inclined to accelerate the Duck River Project (Columbia Dam) and thereby reduce the costs of construction by an estimated 14 million dollars. If delayed, the savings will be lost.

There are many other examples. The manner in which the Endangered Species Act has been administered does not make any economic sense.

Mr. LEGGETT. Those will all be included in the record at this point.

The statements of all of the Members who testified this morning will be included in the record, and we now have, as has been previously indicated, the distinguished John Buchanan of Alabama.

John, it's very nice to have you before the subcommittee.

STATEMENT OF HON. JOHN BUCHANAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA; ACCOMPANIED BY CRISS DOSS, COUNTY COMMISSIONER FOR PUBLIC WORKS, JEFFERSON COUNTY, ALA.; AND JOHN MOELLER, PROFESSOR OF LEGAL STUDIES, UNIVERSITY OF ALABAMA

Mr. BUCHANAN. Thank you, Mr. Chairman. I appreciate this opportunity to be heard and to bring with me two additional Alabamians who, after I introduce our problem, will speak to it—our Public Works Commissioner for Jefferson County, Alabama, the Honorable Criss Doss; and Dr. John Moeller, Professor of Legal Studies of the University of Alabama.

Mr. Chairman, let me begin by saying we do not consider these as adversary proceedings.

Mr. LEGGETT. This is an oversight proceeding.

Mr. BUCHANAN. Precisely.

We are here to present a problem to this committee and to plead for your understanding and to present to you problems that may have relevance in your oversight over this Act and the Department of the Interior.

There is a Chinese proverb about a small carp which fought its way up a raging river and swam successfully through the rapids and finally arrived at the headwaters, and as a reward for its effort the carp became a dragon, which, to the Chinese, is a symbol of power and a good thing.

We have, and are confronted with, in our State of Alabama and in my city of Birmingham, two small fish, indeed three in the State, which may well become dragons, and we would like to speak to you about our problem.

I refer specifically to the Cahaba shiner and the goldline darter, which were proposed to be included on the list of endangered species last November 29. These two fish are alleged to reside primarily in the main channel of the Cahaba River, which our colleague, Walter Flowers, has already indicated runs roughly from my city southward in Alabama.

Now, Mr. Chairman and members of the committee, I believe we are confronted here with mutations of minnow-like fish which may or may not be endangered species, and with a proposed listing of what may or may not be their critical habitat; yet the impact of

this proposed listing would be quite significant for another species that I believe to perhaps be the most endangered one on this planet, and that is *homo sapiens*. We may endanger ourselves more than we endanger other species. But the impact upon people in our area can be significant—upon people who own homes, upon working people, upon entrepreneurs, upon public agents.

We are not confronted here with a Tellico Dam case. We are confronted rather with private development, with the possibility that the proposed listing will impact on one-half a billion dollars or more of private development that has been described, for example, in the April issue of *Southern Living* magazine as model development.

Let me quote what they said about it. They said about the significant part of the development, about which we are speaking, that it was a rare instance when developers were working with the land rather than against it.

We are not talking about industry; we are talking about residential development, office buildings, golf courses, recreational areas and so forth.

We are confronted here with problems that may be in the law itself, and it had been my previous desire to testify in the authorization hearings so that we might present certain suggestions that you might consider for report language or even changes in the law itself; and if the chairman and the committee would be interested in those suggestions, I will be glad to relay them in some other context.

Mr. LEGGETT. Let me ask you this: the law provides after proper review, that various plants and animals be listed as endangered if, in fact, it is determined that they are endangered. It is my understanding that merely carrying out of that determination does not really affect anybody.

What seems to impact is the further compliance with section 7 which requires the consultation process. Of course, as we have seen this morning, it appears that the designation of critical habitat can have a \$100 million impact, which obviously is a major Federal action.

Obviously, if a \$100 million project is proposed by the Federal Government, it has to go through a Federal environmental policy review, the NEPA process. So it would seem that if the proposed construction of a \$100 million project is a major Federal action, then necessarily when it is stopped that would likewise be a major Federal action.

Now I have had that same issue up before the subcommittee on closing of military bases. Philosophically, I am on the other side on that. I can see where you open a military base that is a major Federal action, and as a result you should go through the NEPA process. Selling the property is also considered a major Federal action. I personally do not believe closing a military base involves environmental considerations, but it has been determined that it is, and as a result of the Kentucky case, the Sacramento case, and a number of others, you can't close a military base until you go through these procedures. Of course, the procedure itself allows for a balancing of things. Economic, social, environmental, and other

values are taken into consideration and one comes to a conclusion by properly balanced administration.

It would seem to me that a simple recognition of critical habitat, established as coming under the procedures of NEPA, where the critical habitat designation is significant, would in large part solve some of the problems we are dealing with here.

Mr. BUCHANAN. I think there is great wisdom in what the Chair is saying.

May I point up that I could wish, should that be the case, that the committee might consider a situation like our own. Here we are, dealing with a major municipal area, and there is no major public works project; but there is \$½ billion to \$1 billion worth of orderly and—many of us believe—model development involving many significant economic entities, in my district, and also many individual citizens. While we would not qualify as being a major region of national significance, the impact upon the people who live in Birmingham and Alabama will be quite significant.

As the chairman has indicated, it is not the actual designation per se that may create the greatest problem, but if we may have opportunity to do so, Dr. Moeller will talk about some of the present impact, and Commissioner Doss will talk about what impact it has on his responsibilities and decisions and the people to whom he is responsible in the present situation if these fish are listed.

I would like to outline a case that we have some reason to believe that question can be drawn not only pertaining to whether the law should be revised to cover problems like our own, but also as to the implementation of that law by the Department of the Interior.

Now to understand the controversy, the problem of the proposed listing of these two small fish, it is necessary to understand something about the controversy that has surrounded the Cahaba River for some years. There is a very sincere and dedicated group of environmentalists who have by various means and over a long period of time sought to keep the Cahaba in its present state, have resisted the development that many other forces in our area have supported, and various devices have been used to achieve this end.

There is in process a full section 201 facilities plan environmental impact study. There has been an effort to obtain wild and scenic river status for this truly lovely river, and there has recently been a preliminary negative decision in that respect.

Mr. OBERSTAR. May I interrupt? Could the gentleman just give us the geographical and physical setting of this area? Where in the State is it in relationship to Birmingham?

Mr. BUCHANAN. The proposed Federal habitat of the Cahaba shiner runs from the sewage treatment plant located just outside Birmingham, Ala., that many environmentalists would like to see not in operation, outward and down the Cahaba River from that point, just outside the city of Birmingham, south.

Mr. LEGGETT. Does that flow out to the ocean?

Mr. BUCHANAN. It flows to the Alabama River and toward the south. The goldline darter critical habitat is in the same general facility, but is a different exact habitat.

Mr. LEGGETT. Did you say goldline?

Mr. BUCHANAN. Goldline darter, yes.

Mr. OBERSTAR. Is this a rural area?

Mr. BUCHANAN. No, no; it is metropolitan Birmingham.

What is involved here is the growth of the metropolitan Birmingham, south into my colleague, Walter Flowers', district. This area will include such facilities as Blue Cross/Blue Shield of Alabama, buildings of State headquarters, a five-State regional data center for South Central Bell, various entities of various sizes, churches, schools, recreational areas, and homes. Some homebuilders have everything they have at stake and many individuals have a stake in this. This is urban, metropolitan growth and in an area where a dedicated group of environmentalists have fought that growth, and other forces, including labor, public officials, business entities, and individuals, have thought that orderly development of the model kind, that I would agree with Southern Living, is involved here, might be very much in order and might not be incompatible with the protection of the flora and the fauna of the area and of the stream itself.

The reason we think this controversy may have impacted on the decision of the Department of the Interior per se is because a former chairman of the Alabama Conservancy, which has led the fight to preserve Cahaba in its present state or have it become a wild and scenic river, is a staff biologist of the Fish and Wildlife Service of the Department of the Interior. He attended graduate school in biology at the University of Alabama. At that time he was president of the Alabama Conservancy. He is one of only two sources of any study we know anything about; as a graduate student, and I assume, while he was president of the Alabama Conservancy, he made some observations of the fish in this area.

The second basis for the Department's action was a study by Dr. John Ramsey, an ichthyologist of Auburn University, who described his study as preliminary and pointed up within his own study that much more research would be required to come to firm conclusions about what was involved here as to whether or not these were endangered species.

In January 1976, Dr. Williams sent to the Assistant Secretary of the Interior, Fish and Wildlife and Parks, a memo, January 21, and I have provided copies of that memo to the committee. He outlined therein certain alternatives which might relieve some of the pressure presently bearing on the Cahaba River and to establish ways whereby additional attention could be given the Cahaba in future years.

His recommendations include: (1) Recommend to EPA that a full EIS be prepared on the Jefferson County 101 sewage treatment facilities plan under Public Law 92-500—and this is in process—(2) ask EPA to make every effort to seek alternatives to putting additional treated waste into the Cahaba River; (3) ask EPA to examine the entire Cahaba Basin with respect to treated waste problems, including the impact of runoff from coal stripmine areas; (4) recommend a higher priority for the Cahaba Wild and Scenic River study; and (5) recommend that the FWS lab or regional office initiate studies to obtain additional status information on the endangered and threatened species of fishes and mollusks in the Cahaba River.

Now the fact is that this could be considered a blueprint for the actions which environmentalists, including the Alabama Conservancy, have taken in the last 2 years—this was January 1976—a staff biologist for the Department of the Interior who brought the proposal that these fish and others be included on the Endangered Species List. He also agreed to serve on a task force for the Alabama Conservancy to seek to overturn the proposed negative decision on the Scenic River study during the subsequent time frame. Hence, when in November Dr. Williams himself made this proposal, on the basis of a very preliminary study by Dr. Ramsey, plus his own personal observations as a graduate student and no other basis of which we have knowledge, we had immediate reservations.

We have some questions and some reservations about the objectivity of this proposal on the part of the Department of the Interior. We recognize the competence of the biologist, Dr. Williams. We are not accusing him of any official wrongdoing; we are not saying he does not have a right to be associated with an active environmentalist group as a private citizen, as he sees fit, but where the umpire becomes a player on the team, where the person in the position of the judge becomes an advocate, where the person who must make these decisions and proposals and pass on them is apparently an active partisan to achieve an end, we do have some questions and some reservations.

Mr. LEGGETT. Is Mr. Williams' regular work preparing analyses like this?

Mr. BUCHANAN. Yes, sir; he is staff biologist for Fish and Wildlife Service. He is the only ichthyologist they have on board, as I understand.

Mr. LEGGETT. This is a recommendation, a memo to the Assistant Secretary through the Director of the Fish and Wildlife Service. He points out that he grew up along this river and did his studies there. It is not a situation where he doesn't do this kind of work as a regular part of his work?

Mr. BUCHANAN. Oh, no, nor am I challenging his right to do so. All I am pointing up is the background to our particular problem and the fact, in this case, there may have been some unusual interest in our particular area in the river itself, in the efforts to preserve that river and to stop the development that was taking place there, and that this could conceivably have influence on these particular proposals coming with such little research at that particular time.

Mr. OBERSTAR. Is the Cahaba River being proposed for wild and scenic river status?

Mr. BUCHANAN. It had been so proposed, Mr. Chairman. That proposal has preliminarily been denied.

Mr. OBERSTAR. Was there a study by the State—by a department of natural resources or its counterpart?

Mr. BUCHANAN. The Forest Service made the study, Mr. Chairman, and they did come up with certain recommendations of alternative things in which this particular member intends to be of assistance on the conservancy side in pursuing, because this is a lovely river, and I don't think what is taking place in terms of development is necessarily incompatible with the purposes of protecting this river.

Mr. OBERSTAR. But it is no longer under consideration?

Mr. BUCHANAN. The Forest Service has made a preliminary negative decision and is now soliciting public comments.

Mr. OBERSTAR. I believe it is helpful to get these points in.

Mr. BUCHANAN. Please understand, I do not ever intend this as any kind of an attack upon a public official, only that you might understand our situation.

Now when the proposal came, because of these and other questions, because of the basic situation of the possible stoppage of what seemed to be orderly development and major development affecting many entities and individuals and working people in our area, we immediately sought the information on which this was based and to get all we could from the Department of the Interior.

I must say that our initial efforts a few days after the proposal were very frustrating. It was very difficult to extract from the Department of the Interior the basis for their proposal and the necessary information to share with our constituents and other interested parties, which we tried to do to the extent it was in our power to do; but it was very hard to get this information. But we felt we had received all the information that they had upon which they had based their proposal.

I have placed in your hands a series of correspondences between this member and the Department of the Interior in which I raised a series of questions about the proposal. In the interim, we requested and the Department granted an extension of the time for comment.

We requested and the Department granted a public hearing in the State of Alabama. Other interested parties financed independently a second study to go more in depth—there was so little evidence upon which to base these proposals—and Dr. Moeller will tell you soon about that study.

Mr. LEGGETT. Is that the study by Robert A. Stiles that you submitted here?

Mr. BUCHANAN. Yes, sir; by two ichthyologists, Dr. Stiles and Dr. Howell, who, I believe, are in good professional standing and who had a completely free hand just to go out and find the truth as best they could.

I want somebody on the staff of the committee to take an in-depth look at the correspondence between this member and the Department of the Interior on this, which supplemented our frequent telephonic contacts, the personal contacts of my staff, and look at the questions we ask and the issues we raised, and the responses of the Department of the Interior to our questions, our constituent comments, the evidence brought by these other ichthyologists, and to the comments of this member per se.

I must say the final response from Mr. Greenwalt himself, and the first I had received from him, was a much happier thing. Pursuant to our requests, he did agree to get a panel of ichthyologists outside the Department to review these proposals and all the evidence that had been gathered. He also has indicated sympathy toward an in-depth study now of the situation of the Cahaba shiner.

The other ichthyologists have come up with a good deal of information about the goldline darter which Mr. Moeller will share.

We have as yet inadequate information about the Cahaba shiner. The spring months are the time that you could get more information. That is when the fish is there and before he goes into deep water.

I have asked the Department of the Interior that they conduct an immediate study to obtain more information on the Cahaba shiner before they proceed with any further listing.

I would appreciate, as one of two requests I have of this committee, if you would join me in that request, that Interior take a look now while they can at the Cahaba shiner and see whether the evidence would support or not support the proposed critical habitat area and the proposed listing as an endangered species.

Without taking more time of the committee than I personally have taken, I do want to let my two distinguished friends from Alabama get up to bat.

Mr. Chairman, let me end with these three requests: If the committee sees fit to entertain proposed amendments to the law or report language that might instruct the Department of the Interior, I do have some ideas and I am available.

I would specifically request, however, that this committee join me in a request for an immediate further study of the Cahaba shiner, to make certain this is a correct action the Department proposes to take and to gain better information upon which to base it.

I would ask, secondly, and would invite the committee to our all-American city of Birmingham and our lovely State of Alabama to take a look for yourselves at this development, to hear in a hearing in our State both the environmentalists and their concerns and the other persons and their concerns over this controversy, and to see for yourselves what we are talking about in this problem in Alabama.

Let me end by underlining that this is different from the Tellico Dam. We are dealing with individuals and a city and private development, and I think it might be well worth the committee's time to take a look for yourselves, because this kind of case may prove to be an increasing occurrence as we go along in the implementation of this important law.

Mr. Chairman, let me end my testimony. I am open to questions; otherwise, I will be pleased to introduce my two distinguished Alabamans.

Mr. LEGGETT. As I understand, there is a regulation pending to list four Southeastern fishes as endangered fishes.

Mr. BUCHANAN. Yes sir.

Mr. LEGGETT. Three from Alabama and we are only talking here today about the goldline darter and the Cahaba shiner?

Mr. BUCHANAN. Yes, sir.

Mr. LEGGETT. And you are asking that the committee look at both of those, or just the shiner?

Mr. BUCHANAN. I am asking the committee to hear the testimony of Dr. Moeller in the case of the goldline darter on which a study has already been made, which raises great question about the proposed critical habitat and about the prospect of whether this is or is not an endangered species.

I am asking the committee to support my request to the Department of the Interior that an immediate study be made of the Cahaba shiner at this crucial time of year in which such a study would be feasible before the proposed listing, so that they can gain additional information, since what they have and what we have as yet is so sketchy.

Mr. LEGGETT. Do the regulations also involve a designation of the critical habitat at this time?

Mr. BUCHANAN. Yes, sir.

Mr. LEGGETT. So they are both a listing and a designation?

Mr. BUCHANAN. Yes, sir.

Mr. LEGGETT. All right.

Mr. BUCHANAN. May I proceed with the introduction?

Mr. LEGGETT. Yes.

Mr. BUCHANAN. It is my pleasure, Mr. Chairman, to present to you and to the committee Hon. Criss Doss, public works commissioner for the county of Jefferson, Ala. He is a former college professor, practicing attorney, and an ordained Baptist minister. From 1967 to 1970 he was executive director of the State Democratic committee, I must say, to my pain, since he conducted a very hard-fought campaign against me during that part of his life. From 1970 to 1974 he was a distinguished State legislator. From 1975 to the present he has been a very distinguished county commissioner, and it is my privilege to present him to you at this time.

So as not to further interrupt the process, let me say after Commissioner Doss, I would be pleased if the committee would hear the testimony of Dr. John Moeller, who is a former executive director of the Ameroport, Alabama-Mississippi effort to secure a major deepwater port, a former resource person to the Committee on Merchant Marine and Fisheries and the Committee on Public Works, former counsel to the Alabama Senate Committee on Seaports, professor of legal studies and a member of the professional staff, Marine Law Institute, Law Center, University of Alabama, since 1965, and I appreciate very much your hearing their testimony.

Mr. LEGGETT. We have great appreciation for Baptist ministers here and we are pleased to have whatever comments you care to make.

STATEMENT OF CRISS DOSS

Mr. DOSS. I am really just a country lawyer.

Mr. LEGGETT. Yes, we have heard that before.

Mr. DOSS. My name is Criss H. Doss, and I am the commissioner of public works for Jefferson County, Ala. This area of Alabama is also known as the metropolitan area of Birmingham, Ala.

In this capacity as public works commissioner, I have the responsibility for sanitation and sewerage facilities for about 750,000 people.

As commissioner of public works, the matters of wastewater discharge and the water quality of the receiving streams of the area are direct responsibilities of mine.

I appreciate the opportunity to appear here today before this committee to discuss some of the problems related to the Endangered Species Act and its implementation. As a representative of

local government, this matter weighs heavily on the performance of my duties to the people that I represent and I appreciate the opportunity to share some of my observations with you gentlemen.

The Cahaba River Basin on the southern edge of Jefferson County is the fastest growing section of the area. It is in the Cahaba River that the species of the goldline darter and the Cahaba shiner are found. This river also receives wastewater from four treatment plants, with a total capacity of 10 million gallons per day. Maintaining these plants and planning for their expansion to accommodate the growth is a perplexing, complicated and frustrating endeavor.

The developers and environmentalists are squared off and there is little common ground. There is a small group of radical environmentalists who are dedicated to a no-growth policy and they have taken on the task of seeing that no additional discharge is made into the Cahaba River. To pursue their goal, they have employed the means of the Environmental Impact Statement and the Endangered Species ruling. These steps were suggested by a party who is in the employment of the Fish and Wildlife Service of the Department of the Interior and it is my understanding that he will recommend the action to the Fish and Wildlife Service on determining if the Cahaba shiner and the goldline darter are listed as endangered and rare. With this kind of stacked deck, there is not much chance of our receiving an objective hearing and treatment on the issue at hand.

Gentlemen, the Cahaba River has been studied to death. We have had the 201 Study, the 303 Study, the 208 Study and the Environmental Impact Study; and the endangered species rule is calling for additional study. This has been going on during my entire administration, and while all these studies are going on, no action is being taken to improve the wastewater treatment plants and the quality of the water in the receiving streams is not being upgraded.

I am deeply concerned that a half-baked decision is going to be made to include the Cahaba shiner and the goldline darter on the Endangered Species List. I venture to say that if as many of our interested citizens had not become involved and spent large sums of money, the listing would already be a reality. Yet the scientific information as to the impact of sewer plant discharge on the species in question is almost nonexistent.

As commissioner for public works for Jefferson County, Ala., I am most concerned that the proposed action on which we are speaking today is ill conceived, with insufficient scientific data as its foundation. I am further concerned that the Endangered Species Act is being used as a device by vested interest groups to achieve a result not intended by the act.

The resulting no-growth edict will severely hamper, if not totally destroy, Government's ability to fulfill its responsibility to the public it serves. I am likely to be here next year at a public hearing to have my constituents declared an endangered species because we, as government officials, have failed to meet our responsibilities to provide essential services to the public.

No one denies the importance of maintaining water quality of the highest level possible under the circumstances. To this end,

Jefferson County has been doing all within its power to improve its water quality in the Cahaba River. In this regard, we have been working with the Alabama Water Improvement Commission and the Federal Environmental Protection Agency as well as numerous other agencies who are charged with the responsibility of ensuring the quality of rivers such as this.

I would submit to you, gentlemen, that other governmental agencies, such as Environmental Protection Agency and Alabama Water Improvement Commission, are the proper vehicles through which to ensure the delicate balance between environment and growth.

The Cahaba River is a vital asset to our area, not only for its beauty but also for its life-giving quality. No one has tried to convert the Cahaba River to a sewage ditch. What we, the elected officials of this area, are trying to fulfill is our commitment to the general public, both environmental and business, to ensure that the delicate balance of our society is maintained, not artificially but naturally.

One fact of life we are faced with is the requirement of necessary governmental services to be provided for the public, with no break in those services. Long-range planning is to be geared to the fact that growth must occur in order to maintain the level of services required for the population increases that we are expecting in this region.

Necessarily, we must have increasing tax revenue to pay for these services.

What concerns the local officials is the lack of flexibility imposed on us by the Federal Government in determining the course of our own local development and the artificial means employed to stop any stimulation of our regional economic development. The responsibility to the environment can and must be met on the local level by local people. The quality of our life, as well as the continued existence of our community, is too important to be curtailed through ill-conceived Federal Government action.

In conclusion, I would invite this committee's attention to the need to consider the cost impact of this proposed rule on local government, on consumers and business. The delays, conditions which preclude sensible planning, and the constant presence of an atmosphere of uncertainty is playing havoc in the public and private sectors.

Also, the effect on employment—here we have an item of national concern, namely, unemployment. Yet the situation developing around the endangered species rule on the Cahaba River could jeopardize almost 10,000 jobs, over half of which are permanent. In addition, approximately 35 percent of these jobs are earmarked for minority hiring.

Gentlemen, we at the level of local government need some relief and only you can give it. Please do not let us down.

Thank you.

Mr. LEGGETT. Thank you very much.

John, do you have other witnesses?

Mr. BUCHANAN. Dr. Moeller, Mr. Chairman, and he will present the biological evidence.

I do apologize for the lengthy testimony, but his is, I think, basic to understanding this case, and he will present an overview of this case and the evidence that has been developed outside that of the Department of the Interior.

STATEMENT OF DR. JOHN E. MOELLER

Dr. MOELLER. Mr. Chairman, I appreciate the opportunity of appearing before this committee today and, hopefully, the materials that I will present will be of assistance to this committee in its deliberations on the Endangered Species Act.

At the outset I would like to state not only do I support, but the people I have been called upon to serve support, the basic concepts of the Endangered Species Act.

Mr. LEGGETT. We had extensive documentation of the professional qualifications of the previous witness. Do you want to just quickly summarize yours?

Dr. MOELLER. Yes, sir.

I am a professor of legal studies at the University of Alabama. I hold a bachelor of science degree in commerce and business administration, doctor of jurisprudence, a certificate of international law from the University of London. I am a graduate of the Armed Forces Industrial College and have been a professor at the University of Alabama since 1965.

Mr. LEGGETT. Teaching what courses?

Dr. MOELLER. I teach administrative law. I taught the first course in environmental law in a law school in the South, and I currently serve as the first professional staff member of the Marine Law Institute at the University of Alabama.

Mr. LEGGETT. Please proceed.

Dr. MOELLER. Our major concern, Mr. Chairman, is with the implementation of the act, not with its purposes, and I would suggest or ask that the full statement that I have prepared and submitted to the committee be incorporated into the record.

Mr. LEGGETT. That and all of the pertinent documents that my colleague has presented will be included in the record.

[The information follows:]

STATEMENT OF DR. JOHN E. MOELLER

I am Dr. John E. Moeller and I am a professor of Legal Studies in the Graduate School of Business, the University of Alabama. I also serve as consultant to the Birmingham Area Chamber of Commerce Special Task Force of the Committee on Environment and Economics. Mr. Chairman, I appreciate the opportunity of appearing before this committee today and hopefully the materials that I will present to this committee will be of assistance to it in their deliberations regarding the Endangered Species Act. At the outset I would like to state that I support, and so does the committee that I represent support, the basic concept of endangered species protection. Our major concern is with the implementation of the act and the uses to which it is being put, which in our judgement goes beyond the intent of Congress.

We are not alone in our criticism on this point and in support of this point I would invite your attention to the testimony of the Honorable Jake Garn, Senator from the State of Utah, on April 13, 1978, before the Resource Protection Subcommittee, Senate Committee on Environment and Public Works, where he stated and I quote:

"My amendment is motivated by another assumption, frankly. That is that much of the use of the Endangered Species Act by various environment groups has been very cynical. It has been based less on a desire to protect the furbish lousewort than on a desire to stop the Dickey-Lincoln Project. That can be seen most clearly when groups try to use the Clean Water Act to stop a project, and when that fails turn to

the Wild and Scenic River Act. When that fails, they try the Endangered Species Act, and when that fails they resort to historic preservation. Such activity reflects an attitude of no-growth, not a genuine concern for the environment. My amendment is designed to retain essential protections for endangered species, but to remove the Act as a fail-safe weapon against any development.

"Because, Mr. Chairman, the fact is that there are enough obscure species of plants and animals to guarantee that nothing will happen in this country if no endangered species is ever to be disturbed in its corner of the environment. I do not believe the Congress intended that situation when it passed the Act, and I do not believe the American people will permit that situation to continue. It is better to try to introduce some flexibility into the act, through an amendment such as mine, than to risk seeing the entire Act repealed in a revulsion against environmentalist excesses."

This exact type of orchestration is happening in Alabama now and I use as a specific example a memo dated January 21, 1976, from Dr. James Williams, Staff Biologist, Office of Endangered Species, to the Assistant Secretary for Fish and Wildlife and Parks. On page 2 of this memo he makes the following recommendations:

"I would make the following recommendations to relieve some of the pressure presently bearing on the Cahaba River and to establish ways whereby additional attention could be given the Cahaba in future years.

"(1) Recommend to EPA that a full EIS be prepared on the Jefferson County 201 sewage treatment facilities plan under Public Law 92-500.

"(2) Ask EPA to make every effort to seek alternatives to putting additional treated waste into the Cahaba River. Although initially this may mean additional cost, if we are to maintain the endangered and threatened aquatic fauna and preserve the wild and scenic stream characteristics of the Cahaba River, this is essential. The cost would be a small price to pay for such a unique natural resource.

"(3) Ask EPA to examine the entire Cahaba Basin with respect to treated waste problems, including the impact of runoff from coal strip mine areas. Should EPA decide to continue to allow the dumping of treated waste into the stream, waste loading in the upper end should be carefully restricted in order not to further overload the middle and lower reaches of the river. This type of study would also be helpful in the identification of potential problem areas when and if the Cahaba is designated as a Wild and Scenic River.

"(4) Recommend a higher priority for the Cahaba Wild and Scenic River Study which is scheduled to begin in March of this year. If Additional personnel could be committed to this study perhaps it could be completed ahead of schedule. Of all the candidate Wild and Scenic Rivers presently under consideration, the Cahaba is one which is under particularly severe pressure from marginal development.

"(5) Recommend that the FWS lab or Regional office initiate studies to obtain additional status information on the Endangered and Threatened species of fishes and mollusks in the Cahaba River. In order to effectively determine the status of the species inhabiting the Cahaba River the study should also include other river systems in the Mobile Basin. This information could serve as the basis for listing and the determination of critical habitat for these species.

"Source of information"

"The above recommendations are based on observations made along the Cahaba River and its major tributaries from its headwaters in Jefferson County, Ala., to its junction with the Alabama River in Dallas County, Ala. These observations were made while collecting fishes during my graduate studies at the University of Alabama from 1963 to 1969. Additional studies, primarily involving mussels, were made while teaching at Tuskegee Institute in 1972-74 and were conducted by a graduate student under my direction.

"During this period (1962-1974) a gradual decline in the diversity and abundance of fishes in the Cahaba River was observed. Although less detailed, my studies of the mussel populations of the Cahaba can be compared to studies conducted by Dr. Henry Van der Schalie at the University of Michigan in 1938. This comparison showed a reduction in most species and a drastic reduction in some of the sensitive species."

On November 29, 1977, recommended action No. 5 was begun, after the previous four recommendations had been done. Since Dr. William's memo, it should be noted for the record that a strong effort was made to have the Cahaba River declared "Wild and Scenic" by the Alabama Conservancy, an organization which Dr. Williams served as president previously. This effort failed because the river did not meet the criteria required for such designation. Then can plan 5, i.e., use the Endangered Species Act.

On November 29, 1977, on page 60765 of the **FEDERAL REGISTER** there appeared a notice of proposed rulemaking to declare four fishes rare and endangered and to identify their critical habitat. The stated basis of the proposed rulemaking was, and I quote:

"The section of the Cahaba River inhabited by the Cahaba Shiner has been severely degraded during the past 15 years. The major problem has been the degradation of water quality due to urbanization and coal strip mining. The urbanization activities in the head waters have resulted in an increased silt load while eutrophication has commenced in response to enrichment from newly constructed sewage treatment plants. The coal strip mining activity has resulted in an increase in already high silt load. The habitat is clearly changing and the activities which brought about the changes are continuing."

The proposed rulemaking then goes on to cite similar reasons for declaring the Goldline Darter endangered in Alabama.

I personally made a 2-hour helicopter flight of the river on April 10, 1978, and from altitudes of 200 to 500 feet no current strip mining was located along the river in the alleged critical habitat area. Old strip mining was in evidence but was effectively blocked from the river. This report, together with photographs taken during the flight, have been submitted to Fish and Wildlife Office of Endangered Species, and are submitted herewith with the request for inclusion in the record.

When representatives of county government and the Chamber of Commerce and representatives of labor visited with the Director of Fish and Wildlife Office of Endangered Species in January of this year, we were told that all rulemaking was based on the latest scientific data. However, when we attempted to examine the files of the Service to review the data, it was either not there or we were advised that it was represented by the personal observations of the proposer, a Dr. James Williams. This is verified by the next to the last paragraph in the memorandum of the proposer to the Assistant Secretary, dated January 21, 1976, when he states, and I quote:

"The above recommendations are based on observations made along the Cahaba River and its major tributaries from its headwaters in Jefferson County, Alabama, to its junction with the Alabama River in Dallas County, Alabama. These observations were made while collecting fishes during my graduate studies at The University of Alabama from 1963 to 1969."

In order to properly respond to the basis for the rulemaking, the local community established a special task force composed of scientific people, water quality people, and representatives of local investors to determine the accuracy, or I should say the truth, of the proposed rulemaking basis. As the result the Chamber of Commerce Environmental Economics Committee engaged the services of Dr. Robert A. Stiles and Dr. Mike Howell, recognized biologists to conduct an ichological study of the Cahaba River to determine the accuracy of the statements contained in proposed rulemaking. Their report, which as been submitted to the Fish and Wildlife Service and which I respectfully request be incorporated in the record of these hearings, indicated that the basis of the rulemaking was in error in many ways. To begin with, the habitat of the fish was not as designated in the proposed rules but the exact opposite, which is namely the habitat was deep water as opposed to shallow water ripples. The Cahaba Shiner has never been collected in deep water because the collecting techniques utilized by the collector in fair weather did not lend itself to this type of collection. It might be stated without fear of equivocation that collections are made only at the most convenient spots and do not represent a true sampling of a stream. This is evident throughout the Stiles and Howell report wherein they expanded the sampling locations. Furthermore, the allegations as to the water quality were totally out of context with the facts. The report that we were finally able to pin down that was being relied upon by the Service only covered approximately 7 miles of over 60 miles of proposed critical habitat and such information was only made available on April 14 of this year at a meeting in Tuscaloosa, Ala. The report, or rather the basis for the proposed rule, completely ignores other on-going activities of the community and of the Environmental Protection Agency who were sponsoring 201 and 208 studies and an EIS to determine what the major recommendations need to be to clear up any pollution sources. It is to be noted that the one major pollution source, which is Patton Creek Sewage Treatment Plant and which is recognized as a pollution source, cannot be alleviated if the habitat is declared critical in the matter in which it is being proposed.

I could go on item for item, gentlemen, with specific examples documenting the lack of objectivity in this and other cases proposed by the Fish and Wildlife Service.

For example, on March 21, 1978, Mr. William Acker, Jr., a distinguished member of the Alabama Bar and a member of the Birmingham Chamber of Commerce

Committee on the Environment and Economics, wrote to Secretary Andrus concerning the proposed rulemaking of November 29 and suggested that perhaps the inclusion of the Pygmy Sunfish and Pygmy Sculpin in the proposed rule were diversionary, especially since Dr. Williams was the discoverer of the Pygmy Sculpin. Mr. Harold O'Connor, Deputy Assistant Director, signed the answer to Mr. Acker's letter and volunteered the following, and I quote:

"We believe your allegation that the spring pygmy sunfish and pygmy sculpin were included as " * * the grease on which to slide by the Cahaba shiner and goldline darter' to give the proposal an innocuous appearance is undocumented. The four species were included in the same proposal because of their geographical proximity, in addition to their biological status and the threats to their continued existence. This is a common practice for the convenience of the States, which are asked to review and evaluate Service proposals and submit comments."

How then does the Service explain the geographical proximity issue in their notice of proposed rulemaking dated December 30, 1977, when they propose to list as rare and endangered the Waccama Darter, Waccama Killfish, and Waccama Silverside, all found in a singular area of North Carolina, the Ouachita Madtom found in Arkansas, and the Barrens Topminnow found in Tennessee. All of these species are proposed for listing in one notice.

I would like to share with you a summary of a paper delivered by Bob Truett to the mid-winter meeting of the American Association of Zoological parks and Aquariums.

"It is quite questionable how many of the described sub-species should be recognized as valid sub-species. There are unfortunately some zoologists who are unable to find in nature something that really needs investigating. Therefore they spend their time describing and naming sub-species which cannot truly be distinguished from other populations of the same species by any means known to man. But this activity does satisfy the urge to write papers and assign names. The public generally knowing nothing about zoology can be easily convinced that a newly named creature is an endangered species when in fact it is not a species at all and may be quite distinguishable from abundant population of the same species that are found in other areas."

Just how different is the endangered Goldline Darter in one river from abundant darters in other rivers? This is a question which the average person who has never seen a Goldline Darter can answer. The experts who could answer a question like this keep silent. To support this observation, I submit to this distinguished committee specimens of the Goldline Darter, the Cahaba Shiner and other shiners.

I would summarize this particular point with the suggestion the Congress require more complete scientific data before a species may be declared endangered and a habitat critical. It is interesting to note that the Cahaba Shiner for example was discovered back in the 1960's; however, during this past 15 or so years no scientific data other than the coloration distinctions have been published or made. In other words the myristics of the fish are not known. The biology requirements the habitat requirements of the fish are not known and yet it is proposed to be listed as rare and endangered and critical habitat determined which would under the auspices of section 7 of the act make it totally unfeasible for any investment in this area.

I would make the following observations that the executive department in its concern for the effect of rulemaking and legislation upon the economy of the country has required by Executive order that agency heads are responsible to determine which rules or regulations originated by the agency are major and therefore require evaluation and certification. In other words, an economic impact statement. This is required by Executive Order 11949. This proposal on the Cahaba and other similar proposals all end with the statement that "the Service has determined that this does not constitute a major proposal requiring an economic impact statement under Executive Order 11949 and OMB circular A107." I personally made inquiry of the Director of the Service as to the documentation, the availability of the documentation, supporting this conclusion and I was informed that there was none. The Service has no economists and these determinations are apparently made off the top of the head of the proposer.

In developing criteria, the OMB circular requires the following: (1) The cost impact on consumers, business, markets or Federal, State or local government; (2) the effect on the productivity of wage earners, businesses or government; (3) the effect on competition; (4) the effect on supplies of important materials, products or services; (5) the effect on employment; and (6) the effect on energy supply or demand.

Each agency is to develop procedures for the evaluation for proposals identified by application of approved criteria. The evaluation should include: (1) An analysis of

the principle costs or other inflationary effects of the action on markets, consumers, businesses etc. and where practical analysis of secondary costs and price effects. These analysis should have as much quantitative precision as necessary and should focus on a time period sufficient to determine economic and inflationary impacts; and (2) a comparison of the benefits to be derived from the proposed action with the estimated costs and inflationary impacts. I challenge anyone to find anything in the files or the documentation of the Fish and Wildlife Service where this procedure has been followed. Other concerned persons are also advocating cost benefit analysis as a condition precedent to the declaration of a specie as endangered or habitat as critical.

With the Congress genuine concern for inflation and the effect that it has on our total community I would like to point out the following economic effects of this proposed rule on a very small segment of the country. The commercial construction which is already been completed or is currently underway or is projected for the near future has created 2,300 jobs. Out of that total 816 jobs or 35 percent are minority jobs. Out of the 2,390 construction jobs which have been or are being created by residential construction, 478 are minority jobs comprising 20 percent of the total. In the permanent jobs category, 942 permanent jobs have already been created in Riverchase by commercial facilities which are already in operation. Two hundred and forty-nine of these jobs or 25 percent of the total are presently filled by minorities and an additional 3,750 permanent jobs will be created by commercial facilities which are presently under construction or which are presently under contract. Of that total 865 jobs or 23 percent will be jobs of minorities. This means that out of the total number of permanent jobs have either already been created or are projected for Riverchase alone in the near future 25 percent of those jobs will be for minority employees. It is to be further noted that the projected investment within this area is an excess of \$500 million, all of which is private capital, and certainly this type of action which for the lack of a better term might be considered arbitrary is certainly discouraging to the private investment field. It also might be noted for the record that of these projects within Riverchase all are nonpolluting activities.

While I have addressed some of my remarks toward the problems of section 7 of the act I would invite your attention to the problems of section 9 of the act. In an address to the Wildlife Law Conference sponsored by the Environmental Law Institute and the Smithsonian Institute held in Washington, D.C., February 9 to 11, 1978, Mr. Richard Gutting of this committee's staff pointed out that thus far most of the attention was focused on section 7 but in his opinion section 9 contains the real controversy opportunities.

Under section 9 an Endangered Species may not be "taken" and the term "take" is defined to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct."

Mr. Gutting stated that the key words are "harass, and harm" and that in the subcommittee hearings before the Senate Commerce Committee it was stated that these terms should be defined in the broadest possible manner. He also stated that the Fish and Wildlife Service has issued further explanations of the broad meaning of the term "take" to include "anything which significantly disrupts the species normal essential behavioral patterns including significant habitat modification, or degradation such as forming, timber cutters, etc."

Accordingly, the prohibition against taking could prohibit significant habitat modification by any person public or private. Mr. Gutting speculated that he expects citizens suits to be filed under section 11 to attempt to enjoin state and private persons from violations of section 9.

He envisioned suits via section 9 in the future to contest the extent of the definition of the term "take" to give it the sanction of the courts defining the term in its broadest possible meaning.

Ronald E. Lambertson, Assistant Solicitor, Fish and Wildlife Service, also participated and concurred with Mr. Gutting's appraisal re the problems of section 9.

Gentlemen, again thank you for your attention and I stand ready to answer any questions the members might care to pose.

[The documents accompanying the statement were placed in the hearing record files of the committee.]

Dr. MOELLER. I will not attempt then to read the statement but will take certain points which I believe are of major interest to the committee.

In the beginning, I would suggest that the committee might be interested in the statements of the Senator from Utah who has shared some of the same concerns that we share as far as the implementation of the act.

Mr. LEGGETT. What is the Senator's name?

Dr. MOELLER. Senator Garn.

When the proposed rulemaking first appeared in the Federal Register on November 29, 1977—and I quote from page 60765—it states that:

The section of the Cahaba River inhabited by the Cahaba shiner has been severely degraded during the past 15 years. The major problem has been the degradation of water quality due to urbanization and coal strip mining. The urbanization activities in the headwaters have resulted in an increased silt load while eutrophication has commenced in response to enrichment from newly constructed sewage treatment plants. The coal strip mining activity has resulted in an increase in already high silt load. The habitat is clearly changing and the activities which brought about the changes are continuing.

The proposed rulemaking then goes on to cite similar reasons for declaring the goldline darter endangered in Alabama.

I personally made a 2-hour helicopter flight of the river on April 10, 1978, and from altitudes of 200 to 500 feet no current strip mining was located along the river in the alleged critical habitat area. Old strip mining was in evidence but was effectively blocked from the river. This report, together with photographs taken during the flight, have been submitted to Fish and Wildlife Office of Endangered Species and are submitted herewith, with the request for inclusion in the record.

[The information was placed in the hearing record files of the committee.]

Dr. MOELLER. I think, Mr. Oberstar, with the maps that are included here and the pictures that were taken of the silverslide might serve better to illustrate the location of the particular area under consideration.

When representatives of county government and the chamber of commerce and representatives of labor visited with the Director of Fish and Wildlife Office of Endangered Species in January of this year we were told that all rulemaking was based on the latest scientific data. However, when we attempted to examine the files of the Service to review the data, it was either not there or we were advised that it was represented by the personal observations of the proposer, a Dr. James Williams. This is verified by the next to the last paragraph in the memorandum of the proposer to the Assistant Secretary, dated January 21, 1976.

Now in order to properly respond to the basis for the rule making, the local community established a special task force composed of scientific people, water quality people and the representatives of local investors to determine the accuracy, or should I say the truth, of the proposed rulemaking basis. As the result, the Chamber of Commerce Environmental Economics Committee engaged the services of Dr. Robert A. Stiles and Dr. Mike Howell. Dr. Stiles is the co-discoverer of the snail darter which we have heard so much about, and Dr. Howell is the discoverer of the watercress darter and the only darter on the endangered species list in Alabama at the present time.

These recognized ichthyologists were given free range to make whatever recommendations or observations that they had with no results desired, required, requested or suggested, and during their studies, which were undertaken in February of this year, they found that the basis for the rulemaking was obviously in error because the habitat or the required habitat of the fish—the gold-line darter specifically—was not as described in the proposed rule-making.

As far as the Cahaba shiner is concerned, it was a very difficult fish to find because it, too, is a deepwater fish and does not lend itself to normal collecting methods. Therefore, as far as the Cahaba shiner, very little is known about it, except that in April of this year they began to come out and we began to find them in great numbers. As a matter of fact, we have some with us which I will present to the committee in just a few moments.

But the Cahaba shiner has never been collected in deep water because the collecting technique that is used by the collectors does not lend itself to this. They usually pick a convenient spot where there is either access to a road or other areas which are not difficult to get to.

In the Howell-Stiles report, these gentlemen expanded their collecting and sampling techniques in locations which are evidenced in the maps which we have supplied to this committee.

But as to the basis of the water quality, which was of great concern to us, we made our own water quality observations. We used Alabama Water Improvement Commission current reports. We did sampling on our own and in order to find out what the basis of the water quality used as a basis for the rulemaking, we continually made inquiry and could not determine it, and the basis for the water quality statements contained in the proposed rule-making was not determined by us until April 14 of this year, when at a public hearing and meeting of the Southeastern Fish Association in Tuscaloosa, Ala., we were able to determine that the basis of the report relied upon was the so-called Frye report.

Mr. LEGGETT. What report?

Dr. MOELLER. Frye, F-r-y-e, which was a report dated 1976, which was undertaken by the Environmental Protection Agency; the comments on the Frye report have been included in a supplement to the community's comments and are a part of the record of the Fish and Wildlife Service. But I would just briefly refer to it, sir, and that is, to briefly put it, the habitat contained in the report included only 7 miles of some 60 miles of proposed habitat declarations. The report is conflicting in its recommendations, found on pages 58 and 59 of the report, where the report is contradictory, and the water quality that we have submitted to Fish and Wildlife in support of our position we believe to be the most accurate water quality data on file at this present time.

Going on to the studies themselves, gentlemen, one of the problems that so many people have in identifying the goldline darter—and, incidentally, that happens to be my CB handle; I am "Cahaba Shiner" and I am neither rare nor endangered—but I would like to make reference to another part of the proposed rulemaking that we have not discussed here, which deals with a fish in the northern part of the State, namely, the pygmy sunfish, which was found,

apparently, by trespassers on private land and which when described in the Federal Register was completely in error. The land happened to belong to Senator Albert McDonald, a member of the State Senate of the State of Alabama who appeared at the public hearings in Birmingham on March 15 and his testimony on that is a part of the record; and I would respectfully invite the committee's attention to the record that was made at that March 15th public hearing, wherein the basis for the rulemaking on that particular fish was severely criticized by Senator McDonald.

Mr. LEGGETT. That public hearing was held where?

Dr. MOELLER. In Birmingham, sir.

Mr. LEGGETT. And conducted by whom?

Dr. MOELLER. It was conducted by the Office of Fish and Wildlife Service, the Atlanta Regional Office.

Mr. LEGGETT. That did relate to the listing and to the habitat?

Dr. MOELLER. Yes, sir; it did.

One of the problems that we have in all of this, gentlemen, is, what is a specie? I am not a biologist; I don't pretend to know, but it has been stated by some that:

It is quite questionable how any of the described subspecies should be recognized as valid subspecies. There are unfortunately some zoologists who are unable to find in nature something that really needs investigating. Therefore, they spend their time describing and naming subspecies which cannot truly be distinguished from other populations of the same species by any means known to man.

Mr. LEGGETT. You said that as a lawyer?

Dr. MOELLER. Sir?

Mr. LEGGETT. You say that as a lawyer, not as a biologist?

Dr. MOELLER. Yes, sir; but it is based on readings from other people who are active in the field. However, I would raise the issue as to how different is the alleged endangered goldline darter and the alleged endangered Cahaba shiner from other fish.

Gentlemen, I would like to, if I may, just approach the bench and let you take a look at these species I have brought with me, which were collected during this particular Howell-Stiles study report, and when they have served their purposes for the committee we would like to suggest that the Smithsonian Institute might be a proper receptacle and/or recipient of the species.

May I approach the bench?

Mr. LEGGETT. Let the record show that the witness has presented the subcommittee with three bottles that appear to have fish in them.

It is D. A. Black who allegedly collected these?

Dr. MOELLER. Yes, sir.

Mr. LEGGETT. [continuing]. He certifies that these fish are what are described in the bottle; is that right?

Dr. MOELLER. Yes, sir.

Mr. LEGGETT. This is *Percina aurolineata*?

Dr. MOELLER. Yes, sir; that is the goldline darter. That is a member of the perch family.

Mr. LEGGETT. That is the goldline darter?

Dr. MOELLER. Yes, sir, which we have found in abundance and which even the ichthyologists now agree is not endangered, but only after our efforts.

Mr. LEGGETT. Please proceed.

Dr. MOELLER. Concerning the cost to the community and the Congress concern for cost, and recalling some of the recommendations and statements made at the hearings yesterday, I would make the following observations: That the executive department in its concern for the effect of rulemaking and legislation upon the economy of the country has required by Executive order that agency heads are responsible to determine which rules or regulations originated by the agency are major and therefore require evaluation and certification. In other words, an economic impact statement—this is required by Executive Order 11949 and OMB Circular Letter A-107.

This proposal on the Cahaba and other similar proposals all end with the statement under Executive Order 11949 and OMB Circular A-107. I personally made inquiry of the Director of the Service as to the documentation, the availability of the documentation, supporting this conclusion, and I was informed that there was none. The Service has no economists and these determinations are apparently made off the top of the head of the proposer.

I would invite the committee's attention to the criteria that are required by this Executive order, and it is as follows: The cost impact on consumers, business, markets or Federal, State, or local government; the effect on the productivity of wage earners, businesses or government; the effect on competition; the effect on supplies of important materials, products or services; the effect on employment; and the effect on energy supply or demand.

Each agency is to develop procedures for the evaluation for proposals identified by application of approved criteria. The evaluation should include: One, an analysis of the principal costs or other inflationary effects of the action on markets, consumers, businesses, et cetera, and, where practical, analysis of secondary costs and price effects. These analyses should have as much quantitative precision as necessary and should focus on a time period sufficient to determine economic and inflationary impacts.

Two, a comparison of the benefits to be derived from the proposed action with the estimated costs and inflationary impacts.

I challenge anyone to find anything in the files or the documentation of the Fish and Wildlife Service where this procedure has been followed.

Mr. LEGGETT. What is the date of that Executive order?

Dr. MOELLER. I don't have the exact date. I have the number of it and the OMB circular that implements it, sir. That is Executive Order 11949 and OMB Circular A-107.

Mr. LEGGETT. Do any lawyers here know about when that was? 1975?

Dr. MOELLER. Now Congressman Buchanan and Commissioner Doss have already pointed out the economic impacts of this proposed rule on the local community and I will not repeat them; but I would like to then turn to another point in the law which is of major concern, and that is section 9 and section 11 of the act.

In an address to the Wildlife Law Conference sponsored by the Environmental Law Institute and the Smithsonian Institute held in Washington, D.C., February 9 through 11, 1978, Mr. Richard Gutting of this committee's staff pointed out that thus far most of

the attention was focused on section 7 but in his opinion section 9 contains the real controversy opportunities.

Under section 9 an endangered species may not be taken, and the term "take" is defined to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct."

Mr. Gutting stated that the key words are "harass" and "harm" and that in the subcommittee hearings before the Senate Commerce Committee it was stated that these terms should be defined in the broadest possible manner. He also stated that the Fish and Wildlife Service has issued further explanations of the broad meaning of the term "take" to include:

Anything which significantly disrupts the species' normal, essential behavioral patterns, including significant habitat modification, or degradation, such as farming, timbercutters, et cetera.

Accordingly, the prohibition against taking could prohibit significant habitat modification by any person, public or private.

Mr. Gutting speculated that he expects citizen suits to be filed under section 11 to attempt to enjoin State and private persons from violations of section 9.

He envisioned suits via section 9 in the future to contest the extent of the definition of the term "take" to give it the sanction of the courts defining the term in its broadest possible meaning.

Ronald E. Lambertson, Assistant Solicitor (Fish and Wildlife Service), also participated and concurred with Mr. Gutting's appraisal re the problems of section 9.

Gentlemen, this is frightening when you look at some of the bases for proposed rulemaking that are occurring in the Federal Register that go to private property.

I strongly suggest that it might be "taking of private property without due process of law." I have copies of the Federal Register with me where I can document this.

I appreciate your attention and I stand ready and, hopefully, able to answer any questions the members might care to pursue.

Mr. LEGGETT. Thank you very much.

Do you have somebody else to testify?

Mr. BUCHANAN. No, thank you, Mr. Chairman. That concludes our testimony.

Mr. LEGGETT. That is all very interesting. I will take my 5 minutes at this point.

To your knowledge, has the administration ever determined that endangered species critical habitat designation constituted major Federal action?

Mr. MOELLER. Not to my knowledge, no, sir.

Mr. LEGGETT. The administration is somewhat at a disadvantage in that they are in the middle of proposed rulemaking. I would suspect that under normal procedure it will invalidate the rule-making in the event we cross-examine them as to the evidence which has been presented to them to justify the proposed action that they are taking.

So, let me ask you, what evidence do they have in your estimation to justify the actions on the two species with which you are concerned; to wit, the gold line darter and the Cahaba shiner?

Mr. MOELLER. Yes. I understand your question, Mr. Chairman, to mean in my knowledge what evidence does the service have to support a basis for their proposed rulemaking to declare certain habitat critical.

Mr. LEGGETT. You have probably stated that in your case, but I would like to get your views again as to what the evidence was.

Mr. MOELLER. The evidence at the outset, Mr. Chairman, was based on the personal observations of the proposer, Dr. Williams, when he was a graduate student at the University of Alabama, where he took his Ph. D. and, incidentally, was a fine student.

The other information that they had was the 1976 Boshung report, which was a paper that was delivered at a meeting of the South Eastern Fisheries Council. Dr. Boshung was the major professor of Dr. Williams at the university.

I have read the report and have it in my files. I don't have it with me, but we can submit it to the committee if they so desire. It was not a new study but was merely a reiteration of old data.

Mr. LEGGETT. Now, in your view as an environmental lawyer, what kind of evidence would you think the agency ought to have in order to designate a species as endangered?

Mr. MOELLER. I would say they should have current information, there should be an attempt made at the time of proposed listing to determine the nature of the specie, the habitat requirements and the distribution of the specie.

It was very interesting to me, Mr. Chairman—and I grew up on the Cahaba, too—when I overflowed this in a helicopter to see what had been a very bad situation in years past, with uncontrolled stripmining—and there is no question but what in years gone by this would have been a valid indictment—but the stripmining along the Cahaba River and the proposed habitat, there has been no stripmining in this area for several years, several meaning more than two, and the stripmining spoiled areas have been effectively blocked from the river and, as a matter of fact, River Chase is being constructed on a lot of these old stripmine spoiled areas.

We have submitted photographs of this to the service to support our position, so our major concern, Mr. Chairman, is that they didn't have the latest information on the geography, the situation there at the time they made the listing, and this is what caused the local communities, knowing these facts, to engage in a rather lengthy and detailed scientific study not only to assist the community, but to assist the service in its deliberations.

When we met with Mr. Shreiner on January 24 of this year, we went out of his office with the assurances by him and to him that this would be exactly our approach and that our total efforts would be made in furnishing the latest scientific data available from the best minds that we could have in an objective manner.

Mr. LEGGETT. Did you do that?

Mr. MOELLER. Yes, sir, we did.

Mr. LEGGETT. Have you presented that to the subcommittee?

Mr. MOELLER. Yes, sir, I have.

Mr. LEGGETT. On both of these species?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. OK. That will be included in the record.

My time has expired.

Mr. Forsythe?

Mr. FORSYTHE. Thank you.

Mr. Moeller, it seems to me a large part of your testimony is on the question of the validity of scientific data. The law says, "The best scientific and commercial data available" is to be used.

You are telling us that just is not what they have been operating on in the case of the species you are concerned with?

Mr. MOELLER. Yes, sir, that is our contention.

Mr. FORSYTHE. How will the designation of this habitat impact on private and local government action which all three of you and others described?

Mr. MOELLER. If I may take the liberty, Mr. Forsythe, of taking an example from the Federal Register, and this is typical, it will impact on our particular area in that you cannot increase the flow of the discharge of waters into the river which really would relieve the major water pollution situation in the area, by being able to transfer the Patton Creek surge over to the Cahaba River.

Let me quote to you the major concerns that I think the people of this country need to be aware of as far as the proposed rulings, not only for our area but other areas.

I am quoting from the Federal Register of December 30, 1977, on page 65210 when we are talking about the Waccama killfish. They go on to say, "The environmental factors affecting Lake Waccama are described above."

These factors are also jeopardizing the Waccama killfish. Biologists in North Carolina reviewing the Waccama killfish assigned it as endangered status.

Phelps Lake, like Waccama, is rapidly deteriorating due to the impact of man's activity. These activities include clearing and drainage of areas adjacent to the lake for real estate and agriculture development.

These disturbances have resulted in an increase in the amount of organic material and silt entering the lake. These alterations accelerate the eutrophication process endangering the Waccama killfish.

Mr. FORSYTHE. In essence you are telling me that it is the impact of flows into the river from changes man is making through increased siltation and increased sewage treatment that is causing the problem?

Mr. MOELLER. Yes, sir, and also I found it underlined here, if you will excuse me, I was trying to find it I think in response to your exact question, and that is:

The area is without a modern waste disposal system and much of the domestic waste seeps into the lake. The lake is further enriched by runoff from fertilizer applied to gardens and lawns along the developed northern lake shore.

So, if these specie are declared rare and endangered and this lake declared a critical habitat under section 7 they couldn't fertilize their lawns or their gardens.

Mr. FORSYTHE. How about effluents from sewage treatment plants? Do they get into that? In other words, if you don't treat it, it is going to seep into the river but if you do treat it you still are going to have increased outflow into the river. Do they cover both?

Mr. MOELLER. Well, they don't cover both. You are between a rock and a hard place, Mr. Forsythe. They have sewage seeping here from the existing inadequate sewage on site. If you improve

the sewage treatment plants and increase the water flow your output through the treatment process, you change the flow of the stream and, therefore, disturb the critical habitat and you can't do that, either.

Mr. DOSS. I might point out, Mr. Forsythe, that EPA has already through an environmental impact statement said that we should build a 14-million-gallon plant on the river and they in that report further stated that if we did not put a plant in that we would have seepage from septic tanks and from this kind of thing and so the best environmental technique demanded that we have a plant.

Mr. FORSYTHE. Secondary treatment?

Mr. MOELLER. Tertiary.

Mr. BUCHANAN. Can I add a footnote?

Mr. FORSYTHE. Yes.

Mr. BUCHANAN. What this means, as I understand it, it may be that declaring this Cahaba shiner a critical habitat where it is now proposed could mean that that situation is going to worsen and worsen and that the corrective measures already pointed out by EPA to protect the purity of the water and the species living in it could not be applied because any action taken could disturb the critical habitat of that.

Mr. FORSYTHE. That sounds like a catch 22 situation if I've ever heard of one.

Thank you, Mr. Chairman.

Mr. LEGGETT. The time of the gentleman has expired.

Mr. Dingell?

Mr. DINGELL. Thank you, Mr. Chairman.

Gentlemen, I have been listening to this testimony with some interest. You are indicating to us that these species ought not be listed as endangered species, but you have not addressed yourself to the basic question of what will be the impact on water quality in the river of the plant which is to be constructed.

Now, can you tell me what that is?

Mr. DOSS. Yes, sir, I think I can. EPA, as I pointed out, has done numerous studies on this river.

Mr. DINGELL. I only have 5 minutes. What is the impact going to be? I don't have much faith in the EPA, you should know.

Mr. DOSS. I don't know about that, but EPA says we need to build a plant with tertiary treatment. Our present plant on that river is putting out 94 percent purity water.

Mr. DINGELL. What will the new plants produce in terms of effluents?

Mr. DOSS. About 95, 96 percent.

Mr. DINGELL. Is it going to improve water quality?

Mr. DOSS. Yes, but we can't build—

Mr. DINGELL. Let me finish. I am not convinced that you are right that you can't build, but I want to find out what is it that is the problem if you are going to improve water quality?

Apparently the species that are referred to, and I don't know whether they are endangered or not—

Mr. DOSS. Because the plant—

Mr. DINGELL. Let me finish my question. If you are going to improve water quality, why will the plants be prohibited—

Mr. DOSS. Because you have a greater discharge of water. The present plant is discharging about 4 million gallons and the new plants would be 14 million gallons.

Mr. DINGELL. What is the level of the flow of river under ordinary circumstances? What is low flow and high flow?

Mr. DOSS. Under high flow it is about 60 ft³/s; under low flow it is about 0.67 ft³/s without plant effluent being considered; 3.09 ft³/s sewage plant flow plus 0.67 stream flow equals 3.76 ft³/s in low flow season.

Mr. DINGELL. You will have to tell me what the difference is——

Mr. LEGGETT. You call that a river?

Mr. DINGELL [continuing]. And how it relates to 4 million and 14 million gallons per day.

Mr. DOSS. Sir, in this time of the year, if it were not for the sewer plants discharge there would be no water in the river. As a matter of fact, the fish couldn't survive because there wouldn't be anything for them to swim in.

Mr. DINGELL. You and I are not having a quarrel here, we are just trying to find out what the facts are. You are saying that the river would be dry but for the sewage plants, is that right?

Mr. DOSS. Yes, sir, that is correct.

Mr. DINGELL. Now, you made, I thought, a very interesting statement. You said that under the Endangered Species Act you could not fertilize your lawn or gardens. Perhaps maybe it was one of your associates here.

Mr. DOSS. Dr. Moeller made that statement, but I concur with it.

Mr. DINGELL. Did you make the statement, Doctor?

Mr. MOELLER. Yes.

Mr. DINGELL. You said under the statute you can't increase the flow of the river.

Mr. MOELLER. You can't change the habitat of the fish as described, Mr. Congressman. My point was basically this——

Mr. DINGELL. Would you cite the section of the statute that prescribes that?

Mr. MOELLER. Sir?

Mr. DINGELL. You are an attorney and teacher of law. Please cite the section of the statute that refers to that.

Mr. MOELLER. I am talking about the application of section 7 and section 9 and the definition of the word "take."

Mr. DINGELL. What particular language in sections 7 and 9 do you rely on?

Mr. MOELLER. Once a species is declared rare and endangered and its habitat critical, then all the protection and protected devices of the total act come into play.

Mr. DINGELL. You are saying you can't increase the stream flow?

Mr. MOELLER. Yes, sir.

Mr. DINGELL. Even if the stream is dry, you can't increase the stream flow?

Mr. MOELLER. Yes, sir.

Mr. DINGELL. That is the most extraordinary interpretation of the statute I have ever heard.

Mr. MOELLER. We have seen some unfortunate interpretations of it, too.

Mr. DINGELL. What is your authority for saying that means that?

Mr. MOELLER. Well, the authority, sir, is this: We do not know, no one knows what the habitat requirements of this fish are, so they, therefore——

Mr. DINGELL. What you are really saying is we have a surmise or guess?

Mr. MOELLER. Yes, sir. We have a guess as to what the critical habitat is and what the habitat requirements are, and this is one of our principal recommendations to this committee and to the service that they determine the habitat requirements of these species in order that they might be met.

Mr. DINGELL. It has been some years since I practiced law but I don't recall I ever practiced law by guess or surmise. You know, if the Fish and Wildlife Service is listing species by cooking figures or improperly gathered information or putting together a species which is supposed to be endangered and, in fact, is not or finding a critical habitat when none exists or engaging in taxinomic legerdemain, I think we have troubles with it, but I am not going to give much quarter to anybody who gives me the kind of curious interpretation you have given with regard to the meaning of the word take, putting water which is purer than the quality that exists in the stream now.

Your interpretation is at variance with reason, and I know a little about the statute because some years ago I had a hand in writing it.

Mr. LEGGETT. The time of the gentleman has expired.

Mr. Oberstar?

Mr. Oberstar. Thank you, Mr. Chairman.

I want to thank the panel and our colleague, John Buchanan, for a keen lesson on the problems that have been raised as a result of this act.

As I understand it, you contend that the Endangered Species Act is being used here not to protect an endangered species, but rather to stop development which cannot be stopped in any other fashion?

Mr. MOELLER. This is correct, sir.

Mr. OBERSTAR. That is certainly the message that comes to me from your testimony and from all the statements made.

Mr. DOSS. The environmentalists in public testimony made the statement they did not care what happened to the fish, that their objective was to save the river and so the fish is simply a method to get at what they consider saving the river to mean.

Mr. OBERSTAR. Do you take issue on page 4 of Dr. Moeller's statement, with your citation from the Federal Register, that, "The major problem has been the degradation of water quality due to urbanization and coal strip mining," silt load and eutrophication?

Mr. MOELLER. That is the language of the Federal Register and what we take issue with.

Mr. OBERSTAR. You say that is not in fact happening?

Mr. MOELLER. That is true, sir.

Mr. OBERSTAR. You say there was no coal strip mining in the area; therefore, there is no siltation occurring, as they allege.

Mr. MOELLER. That is right.

Mr. OBERSTAR. So eutrophication is not resulting from discharges of the sewage treatment plant?

Mr. MOELLER. This is true, sir.

Mr. OBERSTAR. Then what is the specific development which environmental interests oppose? What other means are they using to stop it?

Mr. MOELLER. I can't speak for the other side, sir. The only thing I can suggest is they are basically opposed to my development along the river. River Chase is the major development there, which is a planned community, including residential, recreational, shopping centers, a sort of minor city within a city.

Mr. OBERSTAR. Is this the only development or is the only problem discharges into the river from the sewage treatment plants? Are there industrial outfalls?

Mr. MOELLER. No, sir, none whatever.

Mr. OBERSTAR. The only discharge then is from the sewage treatment plant?

Mr. MOELLER. This is true.

Mr. OBERSTAR. Is it also whatever seepage might occur from runoff or septic tanks?

Mr. MOELLER. Right, sir.

May I quote to you, sir, you asked a question and I have the answer, I believe. I have before me volume III, No. 3, dated March 1978 of the publication of the Alabama Conservancy, where they invite attention to the proposed public hearings in Birmingham on March 15.

They say:

This is the only public hearing we will ever get on Federal protection for the Cahaba. The real issue is not the two fish, but the Cahaba itself and whether its water quality will be maintained to support any life, including man.

On that, sir, I rest my case as to their objectivity.

Mr. OBERSTAR. I believe one of the problems with the Endangered Species Act is that it has been used or alleged to have been used for purposes other than that for which it was established.

One of the purposes of this hearing is to pinpoint and fully understand those circumstances under which the act has been subverted. I believe you gave us a clear object lesson on that particular problem.

However, there may be other steps that could be taken to protect the river and this fish that may be endangered. In the course of this hearing I do not know whether we will have the opportunity to fully explore all of the alternatives.

Mr. LEGGETT. We have a vote, and we will have an opportunity to further exercise our prerogatives under the 5-minute rule after we come back. We will suspend the meeting for a few minutes.

[Brief recess.]

Mr. LEGGETT [continuing]. As I understand, Dr. Moeller, you talked to Mr. Shreiner in January of this year, at which time you thought you had a mutual understanding with respect to further and additional professional biological evidence on the two species with which you are concerned, is that correct?

Mr. MOELLER. That is correct, sir.

Mr. LEGGETT. Subsequently, you had Dr. Robert Stiles do a report on the Cahaba shiner and the goldline darter, and that was filed on March 28 with the Department; is that correct?

Mr. MOELLER. This is correct, sir.

Mr. LEGGETT. Then subsequently, did you have a public hearing, or was the public hearing prior to the filing of this report?

Mr. MOELLER. The public hearing was prior to the filing of the report, Mr. Chairman. The public hearing was held on March 15, 1978, in Birmingham. The Howell-Stiles report was filed as comments of the community on March 28.

Mr. LEGGETT. What happened on March 28?

Mr. MOELLER. That is when we filed the report, the Howell and Stiles report, although the verbatim, or the summary of that report was also read into the record by Dr. Stiles at the public hearing.

I would like to also make an addendum to my remarks, if I may, in that because of an error in the maps that were shown in the Federal Register, and which we invited the attention of the Service to, when they corrected them, they extended the public hearing comments for 30 more days, which made it then end the last of April, at which time during that interim period, and after the Southeastern Fishery Council meeting in Tuscaloosa, Drs. Stiles and Howell prepared an addendum to their report, indicating further findings of populations of the goldline darter in the Cahaba River, which addendum was filed on April 28, with the Office of Endangered Species.

Mr. LEGGETT. What are the conclusions of that addendum?

Mr. MOELLER. The conclusions of that addendum, sir, are that the goldline darter is even more prolific than first believed and also that during this addendum period, during the 2-day collection period, some 67 different species were collected, including the Cahaba shiner and the goldline darter, which would then also indicate that other species were thriving in the river, because, if you can collect 67 different species of fish, there doesn't seem to be any major decline in the number of species available.

Mr. LEGGETT. What is your understanding of the standard they go by in determining whether a species is, in fact, endangered?

Mr. MOELLER. I really don't know, sir. I wish I could find it in writing some place.

Mr. LEGGETT. Is it specified under the statute?

Mr. MOELLER. No, sir. I think it is a judgment.

Mr. LEGGETT. Counsel, is it specified under the statute?

Mr. BEDELL. In general terms.

Mr. MOELLER. It is in general terms, but not specific standards. I may suggest, Mr. Chairman, this is one of the recommendations that we make in our comments.

Mr. LEGGETT. Section 1533(b)(1).

Mr. BEDELL. It says, "Best scientific and commercial data available." Those are the operative words as to the type of data that can be used.

The Secretary shall determine whether any species is an endangered species or threatened species because of any of the following factors. (1) The present or threatened destruction, modification or curtailment of its habitat or range. (2) Overutilization for commercial, sporting, scientific or educational purposes. (3) Disease or predation. (4) Inadequacy of existing regulatory mechanism, or, (5) other natural or man-made factors affecting its continued existence with respect to any species over which program responsibilities are vested under the Secretary of Commerce.

So, while those are all five in a series, they really refer to the fifth item, which is meant to qualify all of the previous four.

Mr. MOELLER. Yes, sir, the single basis, as we understand it, appears in the Federal Register of November 29, 1977, found on page 60765, the second column, and I quote:

The five criteria, section 4(a) of the act. These factors and their application to the four species of fishes are as follows: One, the present or threatened destruction, modification or curtailment of its habitat or range.

And that is the only one of the five criteria that is being relied upon by the service to list these species as rare and endangered.

Mr. LEGGETT. By that you mean there is no disease?

Mr. MOELLER. Yes, sir. In other words, two, three, four, and five are not applicable.

Mr. LEGGETT. Endangered species you find over in section 3, subsection (4) "Definition: The term 'endangered species' means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the class determined by the Secretary," and so forth. So I think "danger of extinction" are really the operative words and it is either caused by natural or man-made factors. You indicate that they relied on the threatened destruction, modification or curtailment of its habitat or range and the only activity going on within the range described, as you understand it, is your sewer plant, is that right?

Mr. MOELLER. That is correct, sir.

Mr. LEGGETT. So the question is, is it otherwise endangered, irrespective of the sewer plant, which necessarily we would have to ask?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. So what does your study indicate? You indicate that you found 67 species. That doesn't mean much to us if you only found one shiner and one darter.

Mr. MOELLER. On the map that we have submitted it indicates the different sampling points, Mr. Chairman, and also the numbers that were found at each of these sampling points.

Mr. LEGGETT. On what page is that map? I see a map on page 7 or 8, which has a map of Birmingham.

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. And some 32 numbers.

Mr. MOELLER. Yes, sir, those are the sampling points.

Mr. LEGGETT. And that shows the Cahaba and the Little Cahaba. Why did you take so many samplings along the Little Cahaba?

Mr. MOELLER. Because we wanted to find some new areas where they existed, which we did.

In other words, find them outside the habitat that was delineated in the register to prove they existed in other places.

Mr. LEGGETT. Is the Little Cahaba in the watershed of the Big Cahaba?

Mr. MOELLER. Of the Big Cahaba? Yes, sir, they meet right close together and it is a beautiful stream.

Mr. LEGGETT. But the upper Little Cahaba is not affected by the activities in the Big Cahaba, is it?

Mr. MOELLER. Your sewer facility would be located about where?

Mr. LEGGETT. I will ask the Commissioner to answer that one.

Mr. DOSS. About 31.

Mr. LEGGETT. Between Grants Mill and Helena?

Mr. DOSS. Yes, sir, that would be the location. It is just above 31, just upstream.

Mr. LEGGETT. That whole river has just 60 c.f.s. at its high points, is that right?

Mr. DOSS. If it floods, it is more than that.

Mr. LEGGETT. But assuming it is not flooding, 60 c.f.s. is the high point and 0.67 c.f.s. is the low point.

Now, can you convert to gallons?

Mr. DOSS. It would be about 40 million gallons.

Mr. LEGGETT. Sixty c.f.s. is 40 million gallons?

Mr. DOSS. It would be something like that.

Mr. LEGGETT. That is 40 million gallons per what, per day?

Mr. DOSS. That would be per day.

Mr. LEGGETT. And your new sewer plant will discharge how much?

Mr. DOSS. Fourteen million gallons per day.

Mr. LEGGETT. So about one-third of the minimum Cahaba River flow will constitute the flow from your sewer plant? Is that right?

Mr. DOSS. That is correct.

Now, this is further complicated by the fact that there is actually more water in the river than this, but the Birmingham waterworks pumps the water out of the river, so we are talking about the amount of water that comes by the site of the sewer plants, so it would be more than that.

Mr. LEGGETT. And that takes virtually the whole supply of the water then?

Mr. DOSS. It does in dry weather. They pump somewhere as much as 80 million gallons a day out of the river.

Mr. LEGGETT. Well, it is a very small river out of which to be draining water, I might say. If they suck any out any more it probably would deplete the river to dangerously low levels.

Would you say then that the main bore of the river below Birmingham is the discharge from your existing sewer plants?

Mr. DOSS. Would be runoff from agricultural.

Mr. LEGGETT. I see.

What findings do you make with respect to the numbers you have on this map?

Mr. MOELLER. As far as the golden darter was concerned, Mr. Chairman, they were able to determine, and even the Southern Fishery Council now agrees that with the number of populations which are identified as different collecting points—in other words, not the same population; there was enough separation in territory that these represent what they call populations—I think they found somewhere over five or six different populations of golden darters in the river and, because of this, based on some type of correlation between their sampling procedures and the relationship to the whole, that even the fisheries council does not believe that the species golden darter is endangered.

Mr. LEGGETT. Fishery council?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. What fishery council is that?

Mr. MOELLER. Southern Fishery Council, which is one of the professional bodies that does research work.

Mr. LEGGETT. Is that the National Marine Fishery Service?

Mr. MOELLER. No, sir, it is not. This is a council of mainly academics within the southern region whose major interest is in ichthyology.

Mr. LEGGETT. Did the Southern Fishery Council testify against endangerment of these two species?

Mr. MOELLER. Not to my knowledge.

Mr. LEGGETT. So your statement of what they believed is not totally confirmed.

Mr. MOELLER. What we were told by members.

Mr. LEGGETT. That is not very good evidence though, is it?

Mr. MOELLER. I might have a little better evidence than that, Mr. Chairman.

In a letter dated March 4, 1978, directed to the Director of the Office of Endangered Species, U.S. Fish and Wildlife Service, by Dr. John Ramsey, the good doctor, who is the discoverer of the Cahaba shiner, in referring to the golden darter, says, and I am quoting on the last page:

In summary, there are strong goldline darter populations in the Cahaba River proper, Little Cahaba River, Cooswattee River proper, Ellijay River and Carteray River. To my knowledge, only the main Cahaba River habitat is being impacted. If this be true, I feel that assigning endangered conservation status to the goldline darter is not justified at this time.

This same report, it is my understanding, was delivered at the Southern Fishery Council meeting in Tuscaloosa on April 14 of this year.

Mr. LEGGETT. That was delivered to the Fish and Wildlife Service?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. We have a situation like this in California where questions have arisen concerning the population levels of Tule elk. What is your estimation of the numbers of golden darters and Cahaba shiners?

Mr. MOELLER. I don't have an estimate as to the population numbers, Mr. Chairman, but there has been strong recommendations from the scientific world, from Dr. Ramsey, the discoverer of the Cahaba shiner, and Dr. Howell, and Dr. Stiles, that, because of the scarcity of good data as to populations, habitat requirements, spawning characteristics, and so forth, that further study would be very much in order and this is the type of study that Congressman Buchanan was suggesting be funded, be directed in order that we can get at the truth of this.

We are not interested in destroying any species, Mr. Chairman, and our concern is with the truth, but we don't want to be adversely affected by rules and regulations that are based on half truths, or faulty information.

This has been the thrust of our entire project. We believe that the basis is not supported by the facts and we would strongly urge and recommend that further ichthyological studies be made in order to determine the answer to the questions that you pose. We don't have them.

But yet, based on what they do have, they have the power—"they" meaning the Fish and Wildlife Service Office of Endangered Species—to declare this area a critical habitat and therefore bring down all the impacts of the act on the local communities.

Mr. LEGGETT. How much of the area has been proposed for designation as critical habitat?

Mr. MOELLER. Some 30-odd-miles, I believe, Mr. Chairman.

Mr. LEGGETT. All of the areas within your sampling area?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. Is it the conclusion of your study that the sewer plant construction will not be further damaging to these species?

Mr. Moeller We can't say that for sure, Mr. Chairman, because we don't know what the requirements of the fish are, but it does seem rather odd that if you put better water in the river than you take out that would damage something, but you know some of these fish need some of these nutrients.

Mr. LEGGETT. Has the Fish and Wildlife Service told you that if this area is designated as critical habitat that that will automatically abate your sewer project?

Mr. MOELLER. No, sir, they have not.

Mr. LEGGETT. Have you asked them?

Mr. MOELLER. Yes, sir, we have.

Mr. LEGGETT. What have they said?

Mr. MOELLER. First of all, they tell us there the major concern is the biology, and that there is no direct relationship, you might say, between declaring fish rare and endangered and habitat critical, that the actions to stop projects rests in other agencies or in citizens' suits.

Mr. LEGGETT. Wait a second. You mean that they told you when they establish a critical habitat that they cannot tell you whether or not your project will affect that critical habitat?

Mr. MOELLER. Let me quote a letter, if I may, and I think this will answer your question, because I wouldn't want to speak exactly for the service, but in a letter dated December 5, 1977, to Governor Wallace, signed by Mr. Harold O'Connor, Deputy Associate Director:

The present proposal includes a proposed determination of critical habitat for the subject species and if a final decision is made that these fish are endangered, the service may publish a final determination of critical habitat. In this context, we would welcome any suggestions from you or the appropriate state agencies concerning the critical habitat areas proposed and whether the additional habitat areas exist, which might be considered critical to these fish' continued existence and for survival.

The letter goes on to say that:

Determination that these fish are endangered would, among other things, make them eligible for consideration provided by Section 7 of the Endangered Species Act of 1973.

That section reads as follows:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this act. All other federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize the authorities in furtherance of the purposes of this act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this act and by taking such action necessary as to ensure actions authorized, funded or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary after consultation as appropriate with the affected states to be critical.

That is the best answer that we have.

Mr. LEGGETT. It's not much of an answer.

Now, I presume that is a portion of the consultation as required by the State under section 7.

Mr. MOELLER. That is true.

Mr. LEGGETT. Did the State reply to that letter?

Mr. MOELLER. Yes, sir, they did.

Mr. LEGGETT. What did they say?

Mr. MOELLER. In summary, the State said that they had objections to the listing of the Cahaba shiner and goldline darter without further studies.

Mr. LEGGETT. And then did the Fish and Wildlife Service reply back to that?

Mr. MOELLER. I have not been made privy to any reply to that. This does not mean that they have not. I think Mr. Shiner could answer that question better than I could.

One of our major concerns, Mr. Chairman, is perhaps not so much the action, contraction by any Federal agency, but once a species is listed as rare and endangered which brings about the protection of the act, I referred back to section 9 in my comments previously, but section 11 also provides for citizen suits against any person who violates the law by harassing or taking or doing any of those other things provided for in section 9.

So the real danger of this act is not necessarily so much what a Federal agency might do to stop the project but the laying wide open to suits by third parties to enforce their will. In other words, this gives them a blank check to go after you once the species is rare and endangered and its habitat critical.

Mr. LEGGETT. OK.

What I don't understand, is the procedure for listing. Does that involve a hearing?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. Procedure for the establishment of critical habitat I guess also involves a hearing as required by the regulations promulgated earlier this year. Now, as I understand, there has been neither a listing nor a designation at this point.

Mr. MOELLER. This is true, and to my knowledge, Mr. Chairman—

Mr. LEGGETT. As I read section 7, it says that:

All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and, by taking such action necessary to ensure that actions authorized, funded or carried out by them, do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary after consultation as appropriate with the affected States to be critical.

Now, as I read that, it presumes there would be a listing, and then there would be consultation with the Governor on the critical habitat.

Now, it appears from what you have said they are doing both simultaneously.

Mr. MOELLER. This is true.

Mr. LEGGETT. So that might be the fairest thing so far as folks are concerned, to let them know to what the listing amounts.

Mr. MOELLER. May I suggest that on February 21, 1978, Governor Wallace, Governor of the State of Alabama, in replying to the notice of proposed rulemaking stated on page 2:

On Tuesday, March 18, 1975, a notice appeared in the Federal Register of a status review of the Goldline Darter and Pygmy Sculpin, notice addressed Governor George C. Wallace is stamped December 5, 1977. There was no notice to the Governor directly until December 5, 1977.

Now, what the law requires, the Federal Register, volume 41, No. 188, September 26, 1975, at page 4413:

Congress finds and declares that:

(3) These species of fish * * * are of esthetic, ecological, educational, historical, recreational and scientific value to the Nation and its people. 16 U.S.C. 1541 (3).

Furthermore, Congress acknowledged that a rational relationship existed between the protection of the needs of listed species and the public welfare.

Therefore, the intent is that any proposed listed species should have esthetic, ecological, etc. value before the Congress would have the authority to protect species on behalf of the public welfare.

The Act requires that the species must be endangered or threatened over all or a significant portion of its range in order to be listed.

The range of the Cahaba Shiner and Goldline Darter has as yet not been fully determined. This points out the need for further scientific study before the proposed action is formalized.

This was a response of Governor Wallace.

Mr. LEGGETT. Do we have a copy of that for our record?

Mr. MOELLER. I believe you do, sir, but, just in case you don't, I will make sure you have this one.

Mr. LEGGETT. That will be included in our record at this point.

[The letter follows:]

U.S. DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
Washington, D.C., December 5, 1977.

Hon. GEORGE C. WALLACE,
Governor of Alabama,
Montgomery, Ala.

DEAR GOVERNOR WALLACE: The Endangered Species Act of 1973 (16 U.S.C. 1531-1543) requires the Secretary of the Interior to monitor the status of wild populations of certain flora and fauna, and to identify those which are threatened with extinction (Endangered species) or likely to become endangered in the foreseeable future (Threatened species). The Secretary has delegated that responsibility to our Service. The Act requires a thorough consultation procedure and specifies certain criteria to be used in determining whether a species is Endangered or Threatened.

After reviewing information now on hand, we are of the opinion that the Cahaba shiner, spring pygmy sunfish, and pygmy sculpin, which occur in Alabama, and the goldline darter, which occurs in Alabama and Georgia, should be determined to be Endangered species and their Critical Habitat determined. Recently, we published in the Federal Register our proposal to make such a determination and delineate Critical Habitat for these fishes. A copy of that proposal is enclosed.

The proposed action would make the protection provided by the Act available to this species.

Determination that these fishes are Endangered would, among other things, make them eligible for consideration provided by section 7 of the Endangered Species Act of 1973. That section reads as follows:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruc-

tion or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.

The present proposal includes a proposed determination of Critical Habitat for the subject species, and if a final decision is made that these fishes are Endangered, the Service may publish a final determination of Critical Habitat. In this context, we would welcome any suggestions from you or the appropriate State agencies concerning the Critical Habitat areas proposed, and whether additional habitat areas exist which might be considered critical to these fishes' continued existence and survival. Suggestions concerning areas of Critical Habitat should be forwarded to Washington via the Fish and Wildlife Service's Regional Office (Mr. Kenneth Black, Regional Director, P.O. Box 95067, Atlanta, Georgia 30347).

Questions concerning this action may be referred directly to the Service's Washington Office of Endangered Species, phone 202-343-7814.

Sincerely yours,

HAROLD O'CONNOR
Deputy Associate Director.

Enclosure.

STATE OF ALABAMA,
GOVERNOR'S OFFICE,
Montgomery, February 21, 1978.

DIRECTOR,
Office of Endangered Species, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C.

DEAR SIR: These comments are in response to a notice of proposed rulemaking in the Federal Register dated November 29, 1977, beginning on page 60765.

Apparently the proposed action was instituted by James D. Williams as early as January, 1976. Mr. Williams at the time was a staff biologist with the office of Endangered Species and International Activities.

1. Authority

In a memorandum dated January 21st, 1976, Mr. Williams proposes the Goldline Darter and Cahaba Shiner as candidates for inclusion on the national list of Endangered Species. For this proposition Mr. Williams cites as authority numerous EPA studies which purport to show that treated waste over a long period of time results in mortality for fish and other aquatic organisms. As a general proposition this is not necessarily true. To suggest that the Goldline Darter and Cahaba Shiner are sensitive and/or intolerant to treated or untreated waste without conducting independent studies which would lead to that conclusion indicates a serious lack of scientific objectivity that the U.S. Fish and Wildlife Services should be greatly concerned about.

The motivational paragraph for the above proposition is the first paragraph of the memo wherein Mr. Williams indicates the purpose of the proposed action is to save the Cahaba River. The subject of each sentence in this paragraph is the Cahaba River and the entire memo suggest that the desired end result is saving the Cahaba River and one means to achieve this result is to list any one of a number of fish as endangered or threatened. This is an obvious attempt to circumvent the true meaning and purpose of the act, that is to protect a specie, or species, in danger of extinction, and substitute in its place a result not intended, that is, save a river from the natural consequences of the development, economically and environmentally, of another specie, homo sapien.

Further study of this memo indicates the lack of scientific data that Williams had available at the time. For example, Dr. Ramsey's report was not available at the time, although his study had been completed. Ramsey's report does not reach the conclusion that the population of these proposed fauna has declined while Williams suggests this occurrence, again without citing any scientific basis. It is most interesting that Williams calls for the Fish and Wildlife Service to initiate studies to obtain additional status information on the mentioned organisms "to effectively determine the status of the species in the Cahaba." Such studies could be "used as the basis for listing the species and determining critical habitat." These studies have never been undertaken and I suggest that before the proposed action is formalized such studies must be accomplished.

The State of Alabama recognizes the importance of protecting truly endangered fish, wildlife and Flora from becoming extinct. We would hope that the objectivity of such an action would not be clouded by an advocate for a special interest group. It is imperative that further studies be undertaken with a view toward a degree of objectivity not found in Williams memo of January 1976.

For the record I am enclosing a set of photographs showing the area in general before any development took place and a set of photographs showing the area after development. These photos are representative to the area and certainly belie the charge of deterioration and a failure to plan.

2. Regulations

A. Notice—on Tuesday, March 18, 1975 a notice appeared in the Federal Register of a status review of the Goldline Darter and Pygmy Sculpin, Notice addressed Governor George C. Wallace is stamped December 5, 1977. There was no notice to the Governor directly until December 5, 1977.

B. Notice—Federal Register November 29, 1977 of proposed listing.

What the law requires

Federal Register Volume 40, No. 188 September 26, 1975 at p. 4413: "Congress finds and declares that"

(3) These species of fish * * * are of esthetic, ecological, educational, historical, recreational and scientific value to the Nation and its people." 16 U.S.C. Section 1541 (3). Furthermore Congress acknowledged that a rational relationship existed between the protection of the needs of listed species and the public welfare.

Therefore, the intent is that any proposed listed species should have esthetic, ecological, etc. value before the Congress would have the authority to protect the species on behalf of the public welfare.

P. 44417. The act requires that the species must be endangered or threatened over all or a significant portion of its range in order to be listed.

The range of the Cahaba Shiner and Goldline Darter has as yet not been fully determined. This points out the need for further scientific study before the proposed action is formalized.

Revision of list

50 CFR—§ 17.13

1. As additional data becomes available which shows that a species should be added to or removed from the list.

(b) Any interested person may petition the Director to review the status of any species. Petition must be signed and dated and contain the following: 1. Name and address of person making the request; 2. Who the person represents, if he does; 3. Reasons why the person is making the request and justification for a change in status; 4. Reason why the person making the request is an "interested person;" 5. Designation of species by common and scientific names; 6. Scientific, commercial or other data believed to support the request; and 7. Must be submitted to the Director.

The general procedure for modifying lists of threatened or endangered wildlife furnished by the Department of interior to my office have apparently not been followed. I do not intend to dwell on this matter other than to question the objectivity of the proposed rule.

If it is determined that substantial evidence has been presented which warrants a review, a finding to that effect shall be published in the Federal Register. There seems to be a serious question as to whether or not this requirement has been followed. There has been no notice to the Governor of the State of Alabama which indicates a determination that substantial evidence has even been presented which would indicate the proposed listing of these organisms.

3. Executive Order No. 11949

Executive Order 11949 amended Executive Order 11821 and was in effect through December 31, 1977. The proposed action is dated November 29, 1977, therefore subject to the Executive Order cited above.

This then raises the following questions.

Should an Economic Impact Statement be prepared? Or is the proposed listing a major proposal which deserves evaluation for inflationary impact?

Criteria as per OMB circular A-107: 1. Cost impact on consumers, businesses, State and Local Government; 2. Effect on productivity of wage earners, business or government; 3. Effect on competition; 4. Effect on supplies of important materials, products or services; 5. Effect on employment; and 6. Effect on energy supply and demand.

I must therefore strongly oppose the proposed rule in its entirety and submit for the record the following breakdown of jobs and just one construction area which will be adversely affected if the proposed rule is made final.

Construction jobs. The Commercial construction which has already been completed, is currently underway, or is projected for the near future has created 2,300 jobs. Out of that total, 816 jobs, or 35 percent, are minority jobs. Out of the 2,390

construction jobs which have been or are being created by *residential* construction, 478 are minority jobs, comprising 20 percent of the total.

Permanent jobs. In the permanent jobs category, 942 permanent jobs have already been created in Riverchase by commercial facilities which are already in operation. Two hundred and forty-nine of these permanent jobs, or 25 percent of the total, are presently filled by minorities. An additional 3,750 permanent jobs will be created by commercial facilities which presently are under construction or which are presently under contract. Of that total, 865 jobs, or 23 percent will be jobs for minorities. This means that of the total number of permanent jobs that have either already been created or are projected for Riverchase in the near future, 25 percent of those jobs will be for minority employees.

Nowhere do I find these factors taken into consideration in the proposed rule dated November 29, 1977 which are required by Executive Order.

In view of the mandate of policy from OMB it would appear that based on overwhelming evidence it would not be in the best interest of the U.S. and more particularly the region to enact as final a rule that is as suspect for motivation as the one proposed. Further the basis for the rule is totally deficient in that no verification of scientific data relied upon has been attempted by the proposer. Such action can only be considered arbitrary, capricious and lacking in the degree of objectivity one would expect from the U.S. Fish and Wildlife Service.

In view of the above cited reasons it is requested that the proposed rule be cancelled.

Sincerely,

GEORGE C. WALLACE,
GOVERNOR OF ALABAMA

Mr. LEGGETT. Were there any findings published subsequent to the hearings?

Mr. MOELLER. Not to my knowledge.

We have been totally relying upon the information in the Federal Register in an attempt to search the files and data banks of the service.

Mr. LEGGETT. When do the regulations become final?

Mr. MOELLER. There has been no notice of final rulemaking. In other words, what we are attempting to do is to give the service reason not to make a final rule. This is all in the proposed rule-making stage and, as I say, sir, to my knowledge this is the first time that any serious and major review of proposed rules has been made. That is before a listing.

All of the Tellico snail darter, all of the issues came up after the habitat was declared critical, and the species as rare and endangered.

Mr. LEGGETT. Let me ask counsel what is the order of procedure in this matter. Now, you have proposed rulemaking, which occurred when in this matter?

Mr. THORNTON. I am not sure of the date.

Mr. LEGGETT. When was the proposed rule-making?

Mr. BUCHANAN. November 29.

Mr. MOELLER. November 29, 1977.

Mr. LEGGETT. You had a comment period?

Mr. MOELLER. A comment period which was extended, which the comment period finally expired April 30 of this year, and the service has all of the comments from data and are presently reviewing the comments to determine whether or not a final rule should be promulgated.

Mr. LEGGETT. Then, if final regulations are published whenever, they become final 30 days after publication; is that right?

Mr. MOELLER. Yes; that is correct.

Mr. LEGGETT. Now, is there any time limit on the publishing of those final regulations?

Counsel says no.

Mr. MOELLER. No; not to my knowledge. There is no time limit.

Mr. LEGGETT. Thank you, that is very helpful.

Ed?

Mr. FORSYTHE. Thank you, Mr. Chairman.

It seems to me there was discussion earlier about what you can or cannot do in planning and carrying out private or State and local functions in view of the fact that once critical habitat is delineated as to area it controls more than only Federal activities. What does that really mean in terms of what changes are required in a project? Can you or can you not improve the quality of the water in the Cahaba River by building the 14-million-gallon sewage treatment facility? From your testimony that project would not only add better water but more volume. Under present Interior Department procedures you don't know, and you won't know what the critical habitat will be until after the door is really closed and the areas' limits decided.

Mr. MOELLER. This is true, sir.

Mr. FORSYTHE. That is what it comes down to.

Mr. MOELLER. That is where we are, sir.

Mr. FORSYTHE. And, therefore, your only protection is to be made aware from the start of the fact that a species is being considered for listing. That is the place, the only place that you really can get a handle on it?

Mr. MOELLER. That is true, sir.

Mr. FORSYTHE. So, the question as to whether or not it is an endangered species is the only point at which you actually have any input into the procedure which ends up setting aside a critical habitat which has an unknown impact on the people of an area.

Mr. MOELLER. Because after it's listed, Mr. Forsythe, the door is closed. Then all you have to do—

Mr. FORSYTHE. It is a little difficult to open again.

Mr. MOELLER. Yes, sir, it is.

Mr. LEGGETT. As I understand, that is true because of the fact they have combined these procedures. It might be well that they have combined them because it gives one notice.

Mr. FORSYTHE. There is no consultation before the listing as to what the definition of that critical habitat is to be. What impacts will or will not be accepted is left open.

Mr. MOELLER. That is the open, yes, sir.

Mr. LEGGETT. That is why I think if the existing procedure does not allow for compliance with that 1975 Executive order and the NEPA process, it seems to me that we should make sure that that does occur.

Mr. MOELLER. Just to be perfectly frank, Mr. Chairman, we think there is fatal procedural defect in this whole area, and we hope that it will be corrected.

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. I think that is a very good observation. Mr. Thornton, do you have questions?

Mr. THORNTON. Yes, sir; I do.

Mr. LEGGETT. Can you folks wait a few minutes?

Mr. MOELLER. Yes, sir. We are at your service.

Mr. LEGGETT. Our colleague, Jim Jeffords wants to address the subcommittee at this point. Jim, I know you have to catch a plane at 4:15. Has he gone to catch the plane?

Well, I guess he is not here.

We will go ahead and proceed.

Mr. Thornton?

Mr. THORNTON. Yes.

Professor Moeller, to clarify a couple of points, is it your understanding of the law that section 7 would not prohibit modifications per se but only modifications that were adverse to the species critical habitat or which jeopardized the continued existence of the species?

Mr. MOELLER. I don't think the law is that clear. I think that perhaps there are some implemented regulations that have been recently promulgated, that might be true.

Mr. THORNTON. Do you think the January 4 regulations clarify that point?

Mr. MOELLER. No, sir; I don't.

Mr. THORNTON. Have you read the January 4 regulations?

Mr. MOELLER. Yes, sir, I have a copy of them in my briefcase. But that all deals with the consultation process.

Mr. THORNTON. It deals with consultation, but in those regulations they also define the terms jeopardize the continued existence, and adverse modification. I might refer you to section 420.04, subsection (3) where, in paragraph 2, it makes reference to the fact that when you are dealing with an activity that is not specifically for the conservation of a listed species, which I assume your sewage treatment plant would qualify as, and the Director concludes that the activity is not likely to jeopardize the continued existence or result in the destruction or adverse modification of its critical habitat, then the appropriate Federal agency will be notified of that fact and further consultation will be unnecessary.

Does that paragraph not indicate that to you, in fact, the law is aimed at adverse notification?

Mr. MOELLER. No; it does not, because that is a regulation, and I think the law——

Mr. THORNTON. Doesn't this regulation have the full force and effect of law?

Mr. MOELLER. Except when it's in conflict in the act.

Mr. THORNTON. Do you think it's in conflict with the act?

Mr. MOELLER. I think it's in conflict essentially with the language of the act, because the act says any modification. It does not say "adverse."

Mr. THORNTON. Let me ask you a further question. Assuming the act is, in fact, intended to refer to adverse modification and, of course, we can refer to legislative history for that, in your opinion do you think the establishment of a tertiary treatment facility of the Cahaba River will improve the habitat of the river or degrade it?

Mr. MOELLER. I don't know because——

Mr. THORNTON. You did testify that the water quality would be improved, is that right?

Mr. MOELLER. The water quality would be improved, but whether or not water improved quality would adversely affect the species I don't know. Some species thrive on less high quality water.

Mr. THORNTON. So, in fact, and if there would be any disruption of the construction of that treatment plant, it would result from the fact that the treatment plant is improving the quality of the water rather than degrading it.

Mr. MOELLER. Oh, yes, that is true.

Mr. THORNTON. Do you have any scientific evidence to indicate that the nature of Cahaba shiner or goldline darter is such that, in fact, it would do better in a degraded quality of river rather than an improved river?

Mr. MOELLER. We don't know what the water quality requirements of the fish are, and Dr. Ramsey has so stated, and this is why we strongly urge the service to conduct proper scientific studies to determine what the habit requirements are, habitat, including water quality, because right now——

Mr. LEGGETT. I guess it's a known fact that polliwogs, as an example, do better in heavily substandard water than they do in clear, cold, fresh river water.

Mr. THORNTON. The next question, Mr. Chairman, would be whether, in fact, the change in the quality of the water resulting from the establishment of the tertiary treatment plant would be significant enough for any species to notice the difference.

Do you have any information on that, Professor Moeller?

Mr. MOELLER. No, sir, we do not. And we would like to have it but you see the way the act reads now and in spite of your regulations of January 4, if an activity were to proceed in an area declared critical habitat for an endangered species, while all Federal agencies may support it 100 percent, this does not preclude citizen suits under section 11, and this is one of our major concerns.

Now, we might win. But you still have the harassment of another lawsuit, and time is money.

Mr. THORNTON. No further questions, Mr. Chairman.

Mr. LEGGETT. Mr. Bedell, do you have questions?

Mr. BEDELL. No, I have no questions.

Mr. LEGGETT. To go back to the other point, you have asked the Department about the effect of the classification on your sewer plant; is that correct?

Mr. MOELLER. Yes, sir.

Mr. LEGGETT. Please tell me again what the reply was.

Mr. MOELLER. The reply we got from the Service, to the best of my recollection, is that as far as the Service is concerned, it would have no effect.

Mr. LEGGETT. Are you not satisfied with that?

Mr. MOELLER. No, sir, I am not.

Mr. LEGGETT. In light of some of the lawsuits, certainly that is a reasonable apprehension.

Mr. Buchanan, do you have anything else?

Mr. BUCHANAN. Mr. Chairman, in that connection, I would simply refer you back to the history that I recounted at the outset of the hearing. There is ample evidence to believe that lawsuits would be forthcoming and there is a problem, I think I understand

it, to which I wish the Commissioner would speak, and that is you may run into a situation where a long time delay would have an adverse impact upon the river if these sewage treatment facilities cannot be constructed.

Mr. Doss. Our experience has been in about the last 3 or 4 years that our expenditures are being inflated at the rate of about 12 percent a year. So the longer we wait the higher the costs will be. In addition to that, it has an indirect effect upon the development of the community, unemployment, and higher costs in the development that is going on in the area.

So, there are a number of factors that would be a higher expense. There is definitely a higher cost if we delay and if the river does not get cleaned up any better and that is delayed, so it's both economical and environmental.

Mr. LEGGETT. If you went through the NEPA EIS procedure, and it was determined that you had complied with this procedure, would that give you any further protection?

Mr. MOELLER. In my judgment, no, sir.

Mr. LEGGETT. We would go through it and if we could determine that based on the hearing the listing of the creation of the habitat would not adversely affect the environment, including all of the social and other economic values that are required to be reviewed under the Executive order, that action would become final.

I imagine you can bring a lawsuit almost at any time. It's pretty difficult to totally foreclose people from utilizing the tools the Congress gives them to protect their air, water, and other environmental concerns.

I think the NEAA procedure would be helpful, though.

Mr. MOELLER. It would be.

Mr. LEGGETT. Thank you.

Mr. MOELLER. Thank you, Mr. Chairman.

Mr. LEGGETT. Mr. Buchanan?

Mr. BUCHANAN. Thank you so much, Mr. Chairman.

We appreciate your courtesy in hearing us.

Mr. LEGGETT. Who is next?

The General Accounting Office is here.

Does the Department want to further testify? They don't.

Let's go to GAO at this point. That seems like an item that can be handled.

Is Mr. Canfield here?

STATEMENT OF MR. MONTE CANFIELD, JR., DIRECTOR, ENERGY AND MINERALS DIVISION, GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY MR. KEVIN BOLAND, ASSISTANT DIRECTOR, MR. DONALD HOWARD, PROJECT MANAGER, AND MR. DANIEL SPENGLER, SUPERVISORY AUDITOR

Mr. CANFIELD. Yes, sir.

Mr. LEGGETT. We are very pleased to have you here.

You are the Director of the Energy and Minerals Division of GAO?

Mr. CANFIELD. That is correct, sir.

Mr. LEGGETT. We have asked you to testify here relative to the Tellico project.

Mr. CANFIELD. That is right, and the report we issued last October.

Mr. LEGGETT. You presented that report last October. Can you summarize your conclusions at this point?

Mr. CANFIELD. Yes, sir; I can do that.

Let me introduce my colleagues, if I may.

Mr. LEGGETT. Please, if you would.

Mr. CANFIELD. On my immediate right is Kevin Boland, Assistant Director and Chief of our Federal Resources Branch. Next is Don Howard, whom we brought up from the Atlanta Regional Office, Project Manager on this project, and next to him, Daniel Spengler, Supervisory Auditor on this project, now with our Community and Economic Development Division.

My testimony is quite short. I will not go through the details. You might want to scan through it as I go.

[The statement follows:]

STATEMENT OF MONTE CANFIELD, JR., DIRECTOR, ENERGY AND MINERALS DIVISION,
GENERAL ACCOUNTING OFFICE

Mr. Chairman, we appreciate your invitation to discuss our report entitled "The Tennessee Valley Authority's Tellico Dam Project—Costs, Alternatives, and Benefits." As you know, our report was issued in October 1977 and several events of importance to Tellico have transpired since that time. I would like to point out that we have not actively followed these events and that our comments this morning are based on our work prior to October of last year. We will, however, attempt to answer questions concerning recent events to the extent of our knowledge. I would appreciate it if our full report could be made part of the record at this time.

In January 1977, a Federal Court of Appeals halted completion of the Tellico dam because it would destroy the critical habitat of the snail darter, a three-inch fish protected by the Endangered Species Act. Shortly thereafter, the Chairman of the House Committee on Merchant Marine and Fisheries, Senator James Sasser, and Representative John Duncan of Tennessee requested us to assist in assessing this issue by (1) identifying what portion of project expenditures would provide benefits if the project were not completed, (2) identifying alternative methods to operating the completed project that would not adversely impact the snail darter, and (3) examining the benefits that would occur if the project is completed. We were asked to include in our analysis the "real" costs and benefits, including "unquantifiable" items.

I will briefly discuss each of these areas and our recommendations.

BENEFITS WITHOUT COMPLETION

As of January 1977, TVA had obligated about \$103 million (Attachment I) on the project and estimated that about \$13 to \$19 million was required for completion. The funds for completion are primarily for roads, recreation centers, and reservoir clearing. The actual dam portion of the project has been completed. Closing the sluice gates and impounding the reservoir, however, depends on the outcome of TVA's appeal of the Courts' decision to the U.S. Supreme Court and action by the Congress on exemption legislation.

There are varying estimates of the amount of funds spent to date which might provide benefits if the project is not completed (Attachment II). The Tennessee Endangered Species Committee, for example, has asserted that \$80 million of the \$103 million obligated could still provide benefits. TVA estimates that only \$25.65 million is recoverable. These estimates do not address exactly the same point, however, since TVA's valuation is limited to an estimate of the current value of the land plus the estimated cost of roads and bridges which were needed even without the project.

Our analysis looks at what portions of the project might provide at least some benefits even if the project were not completed. We believe that \$56 million, or about half of the project costs—primarily for land, roads, and bridges—could provide some benefits under this criterion, but the amount of benefits to be derived will depend on how the land is used. Because bridges were built higher and longer than normal to accommodate a reservoir and many of the roads were built to replace

existing roads scheduled for inundation, the benefits probably will not be proportionate with the cost.

Another type of benefit associated with the Tellico project is the economic stimulation from almost \$25 million in salaries and wages paid to the project workers. Some argue that a portion of these payments should be included in the calculation. However, since the direct benefits created by these wages have already been realized, and any secondary stimulation that might accrue will also be realized without regard to whether the project is completed, we have not included these payments as "benefits."

ALTERNATIVES

At the time of our report, project proponents and opponents agreed that a workable compromise between completing the Tellico project and the continued existence of the snail darter in the Little Tennessee River was not possible. A low or an intermediate dam would threaten the survival of the snail darter and, at the same time reduce projected benefits for the reservoir. Abandoning the project without removing at least a portion of the dam is also not feasible because life cycle studies of the snail darter indicate that the dam in its present form also threatens the darters' survival in the river.

TVA has transplanted about 700 darters to the Hiwassee River. Although still questioned by some biologists, TVA claims its transplant is successful based on survival, maturity, and reproduction. For that reason, and because the existing Tellico construction is threatening the darter, TVA petitioned the Secretary of the Interior last year to delist the Little Tennessee River as its critical habitat. The Secretary of the Interior rejected the petition, however, and recommended certain steps to preserve the darter population in the Little Tennessee River.

In addition to studying modifications to the dam and transplanting the snail darter, TVA has considered alternate uses for the valley if the project is not completed (Attachment III). Other groups such as the Tennessee Endangered Species Committee and students and faculty at the University of Tennessee have also developed alternate use plans (Attachment IV). Each of the other groups' plans proposes to preserve the existing river and to develop the agricultural lands, cold-water recreational opportunities and numerous archeological and historical sites. Although some of the plans are quite detailed, none are supported by current benefit-cost estimates which evaluate their feasibility.

Because the dam in its present form threatens the snail darter's survival, any evaluation of alternative plans must include the costs of removing at least a portion of the dam, which is partly concrete and partly earthen. We believe that removal costs could vary considerably depending on the extent of restoration deemed necessary. Removing a portion of the earthen dam, as suggested by the Tennessee Endangered Species Committee, to allow the river to flow more freely could likely be accomplished without great expense. However, TVA maintains that removing only a portion of the dam will result in periodic flooding of some of the prime agricultural land in the valley. TVA estimates that removing the concrete and earthen dams and restoring the area could cost as much as \$16 million (Attachment V).

BENEFITS WITH COMPLETION

The Tellico reservoir would principally provide recreation, shoreline development, and flood control benefits. Other benefits, such as navigation and electric power generation are also expected. The most recent analysis of these benefits was prepared primarily in 1968 by TVA. TVA estimated direct annual benefits of about \$3.8 million annually from the project and a benefit-cost ratio of 1.7 to 1 (Attachment VI). Although project costs have increased about 115 percent, TVA has not updated its cost-benefit analysis.

We examined the assumptions and logic used by TVA to estimate benefits for Tellico. Generally, we conclude that TVA's projections are not representative of the actual benefits that could be derived. In some instances we found that the methodologies used did not conform to Federal guidelines and, in other instances, statistical projections were not valid.

For example, TVA's projection of recreation benefits, which accounts for about 38 percent of all benefits, had several questionable assumptions and did not adequately consider factors such as water quality, type and amount of shoreline development, the amount of land devoted to public access, and proximity to population centers.

TVA based its estimate on an average annual visitation rate per shoreline mile at all existing reservoirs and adjacent parks in the TVA system. Our analysis showed that this average does not reflect the extreme variations, or the reasons for vari-

ations among the individual reservoirs used in the analysis. The visits per shoreline mile used to compute the average ranged from 258 at one reservoir to 19,351 at another.

Also, TVA did not make allowances for recreation visits at Tellico that would result in a reduction in visits at nearby existing reservoirs. TVA officials agreed that different factors would be used if the analysis were to be made again.

Because of problems with this and other benefits, we were unable to determine whether the benefits claimed for the Tellico project were over- or under-stated. Clearly, we believe that more current remaining benefit and cost information is needed on the project and its alternatives before an informed decision can be made.

RECOMMENDATIONS

In our report, we recommended that the Chairman of the Board of TVA gather and provide to the Congress, through the Office of Management and Budget, detailed remaining cost and remaining benefit information on the Tellico project and its alternatives. In addition, we recommended that TVA obtain initial suggestions on developing alternatives and comments on the methodologies, data bases, and resulting analyses from the Director of the Office of Management and Budget, the Chairman of the Council on Environmental Quality, and the Secretary of the Interior.

TVA is ready to impound the reservoir and spend an estimated \$13 to \$19 million to complete the project if the U.S. Supreme Court rules in favor of its appeal and lifts the current injunction. For this reason, and because current detailed benefit information is not available, we recommended that, until the remaining cost and remaining benefit information on the Tellico project is received from the Chairman of the Board of TVA, including the comments of agencies referred to above, the Congress prohibit by law the expenditure of existing appropriations, and defer further appropriations for work on the project that would (1) further endanger the snail darter's survival, such as closing the sluice gates, or (2) not be necessary if the project is not completed or is modified.

Further, we recommended that no action be taken on legislation which would exempt the Tellico project from the Endangered Species Act of 1973 until the Congress has had time to receive and assess the updated information outlined above.

In closing, I should emphasize that these recommendations should not be construed that GAO is either for or against completing the Tellico project, but rather that we believe additional information is necessary to allow the Congress to act on the questions before it. Moreover, we would reach the same conclusion even if the snail darter was not an issue in deciding whether to complete the project.

Attachment I

Tellico Dam project costs as of February 1977

[In millions of dollars]

<i>Type of expense</i>		
Land acquisition:		
Purchase price:		
Land.....		\$16.9
Improvements.....		5.2
Subtotal.....		22.1
Other related costs:		
Acquisition expense.....		1.9
Surveying and mapping.....		0.8
Legal.....		0.2
Relocation.....		0.5
Subtotal.....		3.4
Total land acquisition costs.....		25.5
Construction features:		
Dams:		
Concrete dam spillway.....		5.0
Main earth dam.....		16.2
Auxiliary dams.....		1.3
Subtotal.....		22.5

Reservoir roads, bridges and other adjustments:	
Highways and bridges	25.6
Railroad and bridge	4.1
Reservoir clearing and rim treatment	4.0
Utility relocations and miscellaneous	2.0
Subtotal	35.7
Other construction features:	
Access roads	2.1
Interreservoir canal	1.8
Public use facilities	0.1
General yard improvements and miscellaneous	0.8
Subtotal	4.8
Total construction features cost	63.0
Other:	
General engineering and design	1.6
Planning, surveying, and model tests	3.2
Environmental studies, construction supervision and support, and nonallocated overheads	8.2
Contracts not yet paid in full	1.7
Total other	14.7
Total costs	103.2

Attachment II

ESTIMATES OF THE AMOUNT OF TELlico DAM PROJECT COSTS THAT ARE RECOVERABLE OR COULD PROVIDE BENEFIT WITHOUT PROJECT COMPLETION

Category	Cost as of Feb. 28, 1977	TVA estimate of recoverable cost	Estimate of amounts that could provide benefit	
			GAO	TESC
Land	\$25.5	\$21.0	\$25.5	\$25.5
Construction:				
Dams	22.5	0.0	0.0	0.0
Roads, bridges, and other reservoir facilities ..	35.7	3.3	26.5	34.0
Other facilities	4.8	0.0	0.0	
Other costs	14.7	1.35	4.3	5.5
Total	103.2	25.65	56.3	¹ 65.0

¹ In addition to the \$65 million, the Tennessee Endangered Species Committee (TESC) also contends that \$15 million in salaries will provide benefits.

Attachment III

ALTERNATIVES EVALUATED BY TVA

Project design	Characteristics	Estimated annual costs	Estimated annual benefits	Percent of Tellico benefits
Lower dam	3,200 acre pool extending 25 miles	\$1,426,000	\$3,560,000	60
Lower dam and scenic stream ...	3,200 acre pool; 8 miles scenic stream	1,444,000	3,602,000	61
Intermediate dam	8,000 acre pool extending 29 miles	1,745,000	3,500,000	59
Intermediate dam and scenic stream	8,000 acre pool; 4 mile scenic stream	1,761,000	3,509,000	59
Scenic stream	33-mile scenic river corridor	¹ 82,000	² 129,000	2
No further action	Project abandonment	¹ 0	101,000	1.7
Tellico project	Full pool level with Ft. Loudoun Reservoir ..	1,507,000	5,903,000	100

¹Excludes cost of removing all or a portion of the Tellico Dam and any area restoration that might be necessary.

²Estimate is limited to recreation benefits.

Attachment IV

Land-use alternatives proposed by other groups

Proposal number and major elements

Estimated costs ¹

1. Declare the Little Tennessee River a Class II pastoral river. Acquire easements: 2891 acres scenic and 764 acres public use. Acquire islands: 730 acres. Provide 3 access sites..... \$20,000
2. All aspects of plan (1) plus two added access sites. Develop 14 archeological and historic sites. Construct a visitor center at Halfway Town 1,998,500
3. All aspects of plans (1) and (2) plus 11,000-acre State park, stable facilities at several historic sites, 15 cabins, 50-trailer campground with facilities, and a group lodge for 60 persons 5,450,800
4. Return all land to private ownership..... (2)
5. All aspects of plan (2) and return adjacent lands to private ownership and agricultural development. Provide five access sites. Develop 14 archeological-historical sites..... 1,998,500
6. Designation of Class II river, develop archeological and historical sites, establish a State park, and return agricultural lands to private or semiprivate control..... 5,450,800
7. all aspects of plan (1) plus return all land to private ownership. Provide scenic and public use easements and three access sites..... 20,000
8. Return all land to private or semiprivate ownership with minimal control by a managing authority. use area as a model agricultural management region in combination with a recreational facility. Construct a loop system to maximize tourism (3)

¹ GAO did not verify the cost estimates or determine associated project benefits. Estimates exclude the cost of removing all or a portion of the Tellico Dam and any area restoration that might be necessary.

² Negligible.

³ No estimate.

Attachment V

TVA's estimate of removing dams and restoring project area

	Estimated cost
Remove concrete dam and spillway	\$3,800,000
Remove earth fill dam	5,300,000

Remove auxiliary dams.....	700,000
fill interreservoir canal.....	3,300,000
Reforest river banks and reservoir.....	500,000
Obliterate incompleted roads and site facilities.....	1,100,000
Restore fill at Old Fort Loudoun, Chota, and Blockhouse.....	700,000
Remove 411 and railroad bridges.....	200,000
Remove miscellaneous facilities.....	400,000
Total estimated cost	16,000,000

Attachment VI

TVA's estimate of the direct annual benefits of the Tellico Dam project

Recreation.....	\$1,440,000
Shoreline development.....	710,000
Flood control.....	505,000
Navigation.....	400,000
Power.....	400,000
Fish and wildlife.....	220,000
Water supply.....	70,000
Redevelopment.....	15,000
	<hr/>
	3,760,000

Mr. CANFIELD. We will get right down to the bottom line, which is in essence that we looked at the benefits with completion and without completion of the project, alternatives to the project, and the cost benefit analysis that was done by the Tennessee Valley Authority back in 1968. In our report we recommended that the Chairman of the Board of TVA gather and provide to the Congress, through the Office of Management and Budget, detailed remaining cost and remaining benefit information on the Tellico project and its alternatives.

In addition, we recommended that TVA obtain initial suggestions on developing alternatives and comments on the methodologies, data bases, and resulting analyses from the Director of the Office of Management and Budget, the Chairman of the Council on Environmental Quality, and the Secretary of the Interior.

TVA is ready to impound the reservoir and spend an estimated \$13 to \$19 million to complete the project if the U.S. Supreme Court rules in favor of its appeal and lifts the current injunction.

For this reason and because current detailed benefit information is not available, we recommended that, until the remaining cost and remaining benefit information on the Tellico project is received from the Chairman of the Board of TVA, including the comments of agencies referred to above, the Congress prohibit by law the expenditure of existing appropriations and defer further appropriations for work on the project that would (1) further endanger the snail darter's survival, such as closing the sluice gates, or (2) not be necessary if the project is not completed or is modified.

Further, we recommended that no action be taken on legislation which would exempt the Tellico project from the Endangered Species Act of 1973 until the Congress has had time to receive and assess the updated information outlined above.

In closing, I should emphasize that these recommendations should not be construed that GAO is either for or against completing the Tellico project, but rather that we believe additional information is necessary to allow the Congress to act on the questions before it. Moreover, we would reach the same conclusion even if

the snail darter were not an issue in deciding whether to complete the project.

Mr. LEGGETT. Very good.

Let me ask you this: You heard a lot of the testimony presented to this subcommittee today, and perhaps at other times.

It has been indicated that under the procedure employed in the Tellico project that some \$65 million was expended prior to the time the critical habitat was prescribed by regulation. And that there was no consultation, as such, with TVA respecting that activity.

Did you closely review that?

Mr. CANFIELD. Mr. Howard?

Mr. HOWARD. No, we did not.

Mr. CANFIELD. We did not go into detail as to how much had been expended prior to the actual initiation of it.

Mr. LEGGETT. I understand we gave you a limited mission, but don't you think in the course of reasonable exercise of prudence and caution as an account body looking for wastes in Government, that it would be reasonable to explore that facet of the law prior to making your final conclusion?

Mr. CANFIELD. As to how much had been expended prior to the endangered species question?

Mr. LEGGETT. As to whether the Endangered Species Act was causing a further compoundment of national problems, by having one agency act in one direction and another agency act in another direction, irrespective of economic consequences.

Mr. BOLAND. Mr. Chairman, when we undertook this review we met with several of the requestors and the committee staff, with the intent to scale the review to manageable proportions. It was the agreement at that time that what you are speaking of would not be covered as part of the review.

Mr. LEGGETT. And my staff specifically excluded that?

Mr. BOLAND. It was one of the things that was not agreed to at that time, Mr. Chairman.

Mr. LEGGETT. Didn't you think that was highly unusual?

Mr. BOLAND. I think it was in the interest of completing this work in a timely manner, Mr. Chairman. We could not have gotten the job done to cover everything within the time period allotted.

Mr. LEGGETT. Having in mind the search of GAO for waste in Government, has it not occurred to you to perhaps review the existing law to determine whether or not the existing law causes unnecessary waste of Government assets?

Mr. BOLAND. I think you are correct, Mr. Chairman, in saying that the GAO does have in mind the waste and inefficiencies in the Government, and we do spend a lot of time there.

As part of our ongoing effort that has just begun by a sister division of ours, the Community and Economic Development Division, there will be a rather extensive review made of the Endangered Species Act and the conflicts caused by that legislation.

Mr. CANFIELD. Let me elaborate on that, if I may, sir.

Mr. LEGGETT. You had better come up with better answers than that, because you guys are strong candidates for the Golden Fleece Award.

Mr. CANFIELD. The Community and Economic Development Division has, in fact, begun a self-initiated review to develop precisely the kind of information you are talking about.

If I may read from some notes.

Mr. LEGGETT. What date is this?

Mr. CANFIELD. This review has just begun to develop information on the conflicts that have resulted from the Department of Interior's implementation of the Endangered Species Act. The conflicts being examined include the allegations that implementation has jeopardized the existence of some wildlife, fish, and plants; resulted in selective extinction of other species; delayed Federal construction and development efforts, which is the exact point you raised, and resulted in increased project costs.

This effort is not expected to be completed until March of next year. But that responsibility lies in a different division than my own. As Chief of the Energy Minerals Division, I am responsible for auditing the Tennessee Valley Authority. This is why we did this particular job for you.

The environmental activities of the General Accounting Office lie in a different division.

Mr. LEGGETT. Now, as I understand, you have critiqued the benefits proposed by this project by the original proposers and the benefits that have not materialized as originally projected. So, what are the benefits that you have determined were, in fact, true and correct?

Mr. CANFIELD. Our October report explicitly states, as agreed with the staff, that we would not do a cost/benefit analysis per se. But, as agreed, we did look at the guidelines, the methodologies, and the techniques used by the Tennessee Valley Authority in doing its cost/benefit analysis to determine if those were followed appropriately.

The report lists a few areas in which we have found that the methodologies used by TVA were suspect according to the guidelines in existence at the time TVA did the analysis back in 1968.

Mr. LEGGETT. What is your estimate of the benefits that would be derivable from this project?

Mr. CANFIELD. We did develop figures, and I think my staff has them here, as to what would be the remaining benefits without completion of the project.

Can you guys dig those out very quickly there?

Mr. SPENGLER. They are listed in attachment 2.

Mr. BOLAND. You may also have a copy of the October report, Mr. Chairman. The benefits are also shown on page 10 of that report.

Mr. LEGGETT. Of the quarterly report?

Mr. BOLAND. No, of the GAO report dated October 14, 1977.

Mr. LEGGETT. Estimates of amounts that could provide benefit?

Mr. BOLAND. Yes, that's right.

That should read, "some benefit." Reading across our estimates, the land benefit would be \$25.5. That is in millions.

Mr. LEGGETT. \$25.5 million benefit to land?

Mr. BOLAND. Yes.

Mr. LEGGETT. Over what period of time?

Mr. BOLAND. I believe that is the total land value.

Mr. LEGGETT. But that is not the way you compute benefits under the corps formula.

Mr. HOWARD. Mr. Chairman, I think we are talking about two different things here.

Mr. LEGGETT. Exactly. What I want to find out at this point is whether or not the benefits and costs were tenuously calculated at the outset. When the General Accounting Office makes a recommendation respecting the abolition of 100 million dollars' worth of the Federal expenditure, you obviously are very cogently familiar with the cost/benefit ratio that would be calculated on completion of the project, and the benefits that would be weighed against that at this point.

Mr. CANFIELD. Excuse me. We will answer the benefit question.

We did not recommend the abolition or stopping of this project at all.

Mr. LEGGETT. I understand that, but you did do a study of it.

Mr. CANFIELD. We did a study.

Mr. LEGGETT. You came up with a study as to how the land could be otherwise used. You came up with a whole flock of different things that make up some 100 pages of materials that you have covered with the blue cover, which indicates that it has a degree of GAO credibility.

I am just asking you the obvious question of whether or not you calculated the cost/benefit ratio to complete the project from this point forward!

Mr. CANFIELD. The remaining cost and remaining benefits, we did not calculate. We explicitly suggested that as a recommendation to TVA. Mr. Howard can go into detail as to what we did look at and what we didn't and how each benefit we looked at was derived. He will be happy to do that for you. We explicitly did not calculate the remaining costs and remaining benefits.

That was our recommendation back in October. I also testified before a Senate committee in July and we briefed this committee in May of 1977, that it was the responsibility of the Chairman of the Tennessee Valley Authority to calculate the remaining costs and benefits and to submit the information to the Congress for its use in making a decision with the advice and opinion of the OMB, the CEQ and the Interior Department.

That is almost a year ago.

Mr. LEGGETT. Have they ever done that?

Mr. CANFIELD. To my knowledge, they have not. According to a letter that they wrote in response to our report, however, they stated that the remaining benefits and costs were something on the order of 7 to 1.

There was a task force that was put together at the time the President was looking at the so-called target water projects. According to our understanding of that, they did not recalculate the benefits but simply said that these were the benefits that we came up with in 1968, and comparing them to the remaining costs of \$13 million to \$19 million, you come up with a 7 to 1 benefit/cost ratio.

That is not what we meant by doing a remaining costs/remaining benefits analysis and looking at alternative uses for the river to determine their benefits and costs.

Mr. LEGGETT. As an example, how much power is generated by this project?

Mr. CANFIELD. Literally, at the project site, none. It's not a power generating project, but it does back up water which allows for greater power development downstream.

Mr. LEGGETT. How much power is it accountable for?

Mr. HOWARD. About 200 million kilowatthours.

Mr. LEGGETT. And what is the value of 200 million kilowatthours?

Mr. HOWARD. We have examined values that ranged from about \$290,000 annualized up to \$1.6 million.

Mr. LEGGETT. Current value is \$1.6 million?

Mr. HOWARD. That is the latest value we have examined, yes.

Mr. LEGGETT. Is that per year?

Mr. HOWARD. Yes.

Mr. LEGGETT. So just from power alone, it's rather readily apparent that there is a 7 or 10 or 20 to 1 cost/benefit ratio, isn't that right? Can't you do that in your head?

You take 40 years of benefits, which would give you 40 times 6 properly escalated, as compared to current costs to complete, which is roughly \$10 million or \$12 million, and that does give you 7 or 10 or 20 to 1 cost/benefit ratio, doesn't it?

Mr. HOWARD. The ratio was calculated somewhat different from that, because this \$1.6 million is an annualized net current worth calculation. The \$16 million would also have to be treated accordingly, which would be a little bit different than just spreading it over the 40 or 50 years.

Mr. LEGGETT. You have some interest to deduct, I understand that. It would probably be at this point the single most beneficial project in the United States to complete, would it not?

Do you know of any project in the country that has more than a 3½-to-1 cost/benefit ratio?

Mr. HOWARD. No. As Mr. Canfield mentioned, this 7-to-1 ratio we were talking about is based on benefit projections made primarily in 1968, and may or may not be accurate.

Mr. LEGGETT. I understand you did a very good historical job, and you did critique that. I looked at it last October, and I have not really looked at it since. But I don't really think there is too much value in kicking around a dead horse all that much. We have pretty well booted this thing around and we have to figure out where we go from here.

I understand you have done elaborate calculations as to how this project can be otherwise used, which is valuable to the subcommittee and those views will be looked at.

Mr. CANFIELD. Mr. Chairman, I think you have brought up a good point in terms of our recommendations last October and the facts presented when we briefed the committee last May. If it is that simple to close the books on this project in terms of its cost/benefit analysis, it would have been useful for the Tennessee Valley Authority to have done the remaining cost/benefit analysis. And long before now, if that calculation is that simple, they could have come forward to the Congress with that information. But we were never charged to do that.

Mr. LEGGETT. I have made cost/benefit analyses on 100 different projects, and at least checked the corps and Bureau on those. They don't really appear to be all that difficult to make. They are difficult to make precisely, but when you get figures as gross as this, they don't really appear to be that complicated.

Mr. CANFIELD. The only point I am trying to make is that this isn't exactly a new report. It's not like people didn't know we issued it.

Mr. LEGGETT. I understand.

Mr. CANFIELD. We briefed your people in May of 1977, and the conclusions in that briefing did not change from my testimony before Senator Culver in July of 1977. We didn't issue the report until October because we had to get agency comments. Our recommendations that they do a remaining cost/benefit analysis and submit it through these other agencies to get their views were made known literally a year ago to everybody.

Mr. LEGGETT. And if I had complaints about your report, I should have voiced them when you briefed me.

Mr. CANFIELD. Not you, sir.

What I am saying is that the Tennessee Valley Authority, if it really wanted to close the sluice gates and get this project decided, has had nearly a year to do what you call simple cost/benefit analysis. But this was not our charter.

Had it been our charter, I can assure you we would have done it for you. What we did was what we were asked to do. I am not trying to justify it one way or the other, but I am saying it was the explicit recommendation of the General Accounting Office almost a year ago and, certainly in testimony before a Senate committee. TVA could have gone ahead with it and gotten it done.

For some reason or another they didn't want to do it.

Mr. LEGGETT. We are going to get TVA up here, and we will necessarily have to ask them all of those questions, and they better be prepared.

Mr. CANFIELD. It could have been done by now, but it has not been done.

Mr. LEGGETT. Maybe they are piqued for some reason.

Mr. CANFIELD. They may be.

Mr. LEGGETT. As I understand they have a Director, they don't have a complete Board. It may well be they are catatonic as a Federal agency. If they are in that condition we will find out, too.

Mr. CANFIELD. Their situation is that they can make continuing decisions but not new ones, as I understand it, at the present time.

Mr. LEGGETT. That seems rather bizarre, doesn't it?

Mr. CANFIELD. It's a one-man show right now.

Mr. LEGGETT. It does appear that we should have a procedure that would allow for proper notice and hearing to Federal and State agencies that are impacted by Federal legislation and regulations prior to the time that those regulations become final, wouldn't you say?

Mr. CANFIELD. I agree, sure.

Mr. Forsythe?

Mr. FORSYTHE. No questions, Mr. Chairman.

Mr. LEGGETT. Counsel?

Mr. THORNTON. Yes, Mr. Chairman.

Mr. Canfield, the GAO did look at how much money basically the Federal Government would lose, assuming that this project is never completed.

What were your findings in that regard?

Mr. CANFIELD. In essence, the argument in our analysis is that there would be some benefits, not necessarily commensurate with the costs, totaling as much as a little over \$56 million of the total amount obligated through February of 1977.

We did not quantify how much benefit. So, if you subtract 56 from 103, then I guess you could argue that the Federal Government would lose, in terms of the strict cost/benefit analysis technique something on the order of \$50 million.

That does not, however, calculate the benefits that could be derived from alternative uses of the river being suggested by environmental and other groups. These might have large benefits themselves if the alternative benefits were calculated.

But, if you just look strictly at completing the dam versus tearing down the dam or the earthen part of the dam—going back to zero—you would be talking about \$50 million. If you look at alternative uses of the river, the figure might be different. I just don't know.

Mr. THORNTON. What you are saying, in essence, then, putting aside the question of alternative uses of the river, that if the dam goes no further than it is today, out-of-pocket loss would in a sense be on the order of \$50 million; is that correct?

Mr. CANFIELD. There would be out-of-pocket expenditures which would—go ahead, Dan.

Mr. SPENGLER. The figure is about \$47 million. However, that does include some salaries which provided economic stimulation to the area.

Mr. LEGGETT. That does not include future benefits?

Mr. SPENGLER. There might also be some secondary stimulation from the salaries.

Mr. THORNTON. What accounts for the \$47 million?

Mr. HOWARD. Basically, the \$47 million would be made up of primarily the dam and clearing trees.

Mr. SPENGLER. The figure also includes the roads not to be finished if the project is not completed and the bridge constructed over the proposed inter-reservoir canal.

Mr. CANFIELD. In addition, the bridges are longer and higher than they otherwise would be to accommodate the proposed reservoir.

Mr. THORNTON. Of the \$56 million that would provide benefit, what percentage of that represents costs attributable to acquisition of land?

Mr. HOWARD. Of that \$56 million, I think \$25.5 million is attributable to land.

Mr. CANFIELD. That was acquisition cost of the land.

Mr. THORNTON. That was actual acquisition of the land. What would be the resale value of that property today?

Mr. SPENGLER. We obtained estimates from three realtors and one bank president in the area, and the estimates range from \$14 million to \$46 million.

Mr. THORNTON. Weren't you able to evaluate any of those estimates?

Mr. SPENGLER. We didn't narrow it down from there, no.

Mr. THORNTON. You didn't choose to determine which of those \$14 million or \$46 million estimates were correct?

Mr. SPENGLER. No; we didn't.

Mr. THORNTON. Is it correct that you did, in fact, give a cursory look at some of the various alternatives that have been proposed; is that correct, Mr. Canfield?

Mr. CANFIELD. Yes; that is correct.

Mr. THORNTON. What were your findings respecting those alternatives?

Mr. CANFIELD. We didn't come to any judgments on the alternatives. We put in the report the amount of costs which could provide benefits if the reservoir were not completed.

For example, the Tennessee Endangered Species Committee contended on the one hand \$80 million could provide benefit, and TVA on the other hand estimated something like \$25.7 million would be recoverable.

Kevin might explain a little bit more on that.

Mr. BOLAND. I just wanted to add at the time we were looking at the alternatives, and it is still true today, none of the alternatives were supported by cost/benefit analyses.

And as we stated in our report, until more information is obtained, the merits of these proposals cannot be evaluated.

Mr. THORNTON. I see in attachment 3 of your statement that you have calculated, however, an estimated percentage of the full Tellico benefits for various alternatives.

How did you arrive at that calculation?

Mr. SPENGLER. Those are TVA's figures and were included in their environmental impact statement.

Mr. THORNTON. Did you make any evaluation of those calculations?

Mr. SPENGLER. The only one we really looked at was the scenic stream alternative, which they mention quite frequently. The only thing we noticed was that their estimate of the benefit—which they said is 2 percent of the benefits to be derived from the Tellico project—was limited to recreation and did not include benefits for agricultural or cultural development, industrial development, fish and wildlife, shoreline development or redevelopment.

We think if the alternatives were to be evaluated correctly, all those benefits would have to be considered.

Mr. THORNTON. So, is it your testimony then that the TVA's evaluation that the scenic stream would represent 2 percent of Tellico's benefits is on the low side?

Mr. SPENGLER. Yes, sir.

Mr. THORNTON. If you were attempting to establish a cost/benefit analysis or I should say a benefit analysis for a scenic stream in the area, what factors would you consider?

Mr. SPENGLER. Those which I mentioned previously plus recreation benefits.

Mr. THORNTON. How would you evaluate the recreational benefit of a scenic stream?

Mr. LEGGETT. You usually calculate it at about a buck to buck and a half per user today, don't you?

That is the way you calculate recreation benefits. Figure about what it's worth to look at it or fish in it, when you multiply it times the number of days.

Mr. HOWARD. That would be about the value we would place on it. The only problem would be coming up with how many people are going to come there. That is the real problem in the calculation.

Mr. THORNTON. One of the major benefits of the project in the original TVA cost/benefit evaluation was recreation; is that correct?

Mr. HOWARD. Originally, yes.

Mr. THORNTON. What percentage of the benefits did that represent?

Mr. SPENGLER. It was \$1.4 million of a total of \$3.8 million.

Mr. THORNTON. What percentage does that represent?

Mr. HOWARD. Approximately 40 percent, I would think.

Mr. THORNTON. Forty percent of the original benefits of the project were basically from visitor use and that would be associated with the use of the reservoir; is that correct?

Mr. HOWARD. Yes, sir.

Mr. THORNTON. And yet in your study you question the accuracy of that estimate. Why is that?

Mr. HOWARD. The reasons for our questions are more completely delineated in our report, but one thing we didn't necessarily agree with was the methodology used. When you take an average visit per shoreline mile of figures that range from 200 people per year per mile up to 20,000, there is no real assurance that an average is going to be representative of any particular project.

That was one real problem we had.

Another problem we had is that there are some 20 lakes within a 100-mile radius of the Tellico project. There was no consideration for how many of the visitors they were expecting to come to Tellico would actually be choosing Tellico in lieu of another lake. And, in such a case, you really create no benefit, you are merely transferring it from one lake to another.

Mr. THORNTON. Did you make a calculation of how many visitor days are used on the stream itself currently?

Mr. HOWARD. Existing?

Mr. THORNTON. Yes.

Mr. HOWARD. That was considered in TVA's analysis. I don't recall the exact figure, but it was used primarily as a deduction from projected benefits.

Mr. THORNTON. I am asking how many people go to the stream now.

Mr. HOWARD. I don't have that figure readily available.

Mr. THORNTON. So you can't make a comparison between the existing visitor use of the area compared to the visitor use and recreational benefit of the area if it's turned into a reservoir?

Mr. HOWARD. No, but I think one thing should be pointed out. The river as currently existing has very little land management to it, whereas I think some of the environmental groups would envision a river-based recreational area which would have a lot more

facilities. Of course prior to Tellico it had no facilities to draw that many people, for one thing.

I don't think we can look at how many visitors were coming prior to Tellico, and say this was the absolute figure that could be expected with a scenic river.

Mr. THORNTON. You did do some cursory evaluation of some of those proposals. Do you think any of them have any credence at all?

Mr. HOWARD. I think that is really what we are trying to get down to here. There have been, as we delineated in the report, several proposals in addition to a reservoir there. Our basic point is that there has never really been any good benefit-cost analysis of those proposals for comparison to a reservoir.

To us, that is one thing that is basically lacking even now. Further data is needed to really compare those proposals and to determine, in dollars and cents, the differences in the proposals.

It could very well be, as Congressman Leggett has indicated, that benefits from a reservoir may far exceed the benefits of these alternatives. But, the point is right now nothing exists that shows this is the case and, if it is the case, how many dollars we are talking about.

Really, that is one basic point we are trying to make. We feel this is something that is needed.

Mr. THORNTON. So it could also be that an alternative development for the area would produce equal or more benefits than a reservoir would.

Mr. HOWARD. That is an open question. That is something that I—

Mr. THORNTON. You don't have information one way or another on that?

Mr. HOWARD. No; I do not.

Mr. THORNTON. Let me ask one further question about the value of this area as a scenic stream.

Mr. LEGGETT. He does not have any information that there is an alternative project that can produce these kinds of benefits.

Mr. THORNTON. He does not have any information to date what the value would be.

Let me ask one further question: What is it about the area that would lend itself to being developed for other than a reservoir?

Mr. SPENGLER. For instance, over 200 archeological sites have been documented in the area, 14 of which are considered major sites. Eleven of those would be inundated by the reservoir, three would be preserved by TVA. There are 25,000 acres of class one, two and three land in the river valley. The potential agricultural yields from that land have been estimated as much as \$17 million per year based on 1973 farm prices.

Mr. THORNTON. That is not based on any existing agriculture in the area; that is based on what the land possibly could develop?

Mr. SPENGLER. Right. There are certain assumptions made.

Mr. THORNTON. Congressman Duncan testified most of the land was in a land bank prior to the development of the Tellico project. Have you any information on that?

Mr. SPENGLER. There was some land in the land bank. I don't believe it was the majority of the land, however.

Other benefits would accrue because the valley contains the last large flowing river in the region. Considering the 17 reservoirs within 50 miles, and the overflow of visitation that is expected from the Great Smoky Mountains National Park, the Department of the Interior and others feel that the river would be more valuable for alleviating visitation pressure than would still another reservoir.

Mr. THORNTON. Is the Little Tennessee a trout fishing stream?

Mr. SPENGLER. Yes; it is.

Mr. THORNTON. No further questions, Mr. Chairman.

Mr. LEGGETT. Did you folks come to any conclusion as to whether or not the dam would impact adversely on the snail darter?

Mr. CANFIELD. Yes; we said at the time we did the study that it was universally agreed if you close the sluice gates it would destroy the snail darters habitat.

That was agreed on by both the Tennessee Valley Authority, everybody who was against the dam, and everyone else. We are aware that they are now talking about some sort of compromise which Chairman Freeman is trying to work out with the Interior Department.

We are not really up to date on that, but at the time of our study people acknowledged that there really weren't any compromises possible, and that you had to tear out at least earthen portions of the dam in order to allow the fish to go back and forth for spawning purposes.

Mr. LEGGETT. That is very helpful.

It is now quarter to 5 and time for a rollcall vote.

I think we have worked hard enough on this problem today, so we will adjourn at this point until June 1. We will go on until we resolve this matter and everybody has his say.

The meeting will stand adjourned.

[Whereupon, at 4:50 p.m. the Subcommittee on Fisheries and Wildlife Conservation and the Environment adjourned.]

ENDANGERED SPECIES OVERSIGHT

THURSDAY, JUNE 1, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT, OF THE
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 1:40 p.m., in room 1334, Longworth House Office Building, Hon. Robert L. Leggett (chairman of the subcommittee) presiding.

Present: Representatives Leggett, Forsythe, Dingell, and Oberstar.

Mr. LEGGETT. The meeting of the Subcommittee on Fisheries and Wildlife Conservation and the Environment will please come to order. This afternoon, we will continue our hearings on the Endangered Species Act. The committee has already reported a 3-year extension of the Endangered Species Act, and we are now awaiting floor action. We have heard from a number of people in the last two scheduled hearings on endangered species oversight, representing areas of concern and conflict between construction of public works facilities and designation of critical environmental habitat.

So, we are pleased to continue the hearings today. We have not scheduled the administration to come back today, but they will be here in due course.

Mr. LEGGETT. We have a number of distinguished environmentalists who want to be heard, and chief among those is the co-chairman of the House Environmental Study Conference, the very distinguished Jim Jeffords of Vermont.

So, Jim, it is with very much pleasure I welcome you before the subcommittee and look forward to your remarks with anticipation.

STATEMENT OF HON. JAMES M. JEFFORDS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VERMONT

Mr. JEFFORDS. Thank you very much, Mr. Chairman. It is a pleasure to be here. As you know from the witnesses you have been listening to, this is a critical period of time for the Endangered Species Act, and I am delighted to have an opportunity to add my comments.

Before I go into my remarks, I would like to add a few remarks based upon the testimony which I listened to, and you listened to very patiently, last week.

Mr. LEGGETT. Your statement will appear in the record as though you read it and you can summarize it, as you wish.

Mr. JEFFORDS. Thank you, Mr. Chairman.

With respect to the Alabama project and the Cahaba shiner and the goldline darter, I would like to just point out that from all the evidence that I have listened to, nowhere was there any indication that the law itself had any problems, and that it was primarily a problem of inadequacies in the administration of the law or inadequate studies, or problems like that. The act itself, though, did not seem to be any problem with respect to the Alabama situation.

I think that is important to know, because I think the same has been true generally. I believe there have been some 4,500 consultations involved with the Endangered Species Act, and only three of those have resulted in litigation. The reason I bring this up, which I will talk a little bit about, is, of course, the Senate amendment to the act, which seems to me to be trying to create a solution to a nonproblem. It appears to me the act is working well. It has demonstrated that it can work and it will work if properly funded.

It would seem to me, from listening to the testimony again, that perhaps the only criticism is the lack of funds for adequate studies, as Congressman Buchanan brought out, and that perhaps there should be care to make sure that there is adequate authorization here. I know in the budget, for instance, the recommendations were substantially cut from what was desired by the people who administer the law, and it would appear to me that there may well be a problem of inadequate funds to do adequate studies.

Mr. LEGGETT. That is exactly right. As you know, while the environment is high on the administration's list of priorities, allocation of funds for personnel is not. We find that the fish and wildlife budget has been cut both at the Interior level and at the OMB level and this certainly is a perennial situation.

Mr. JEFFORDS. Thank you, Mr. Chairman. Now, I will go to my statement.

Since the end of the last ice age, 100 genera of large mammals became extinct in the Western Hemisphere alone.

The advent of civilization has seen the rate of extinction accelerate, keeping pace almost, it would seem, with human population growth. We are now in a time when few large terrestrial species of animals, except those which have adapted to coexistence with humans, or which have become semidomesticated, may be regarded as safe. Most large mammals in Africa, for example, are now endangered or threatened, or soon will be threatened. Animals which existed in large numbers only a few years ago, such as Grevy's zebra or the black rhinoceros, are in imminent danger of extinction. In Southeast Asia and elsewhere in the tropics, not only commercially exploitable species, but practically all species, plant and animal, face destruction with the wholesale loss of lowland and montane forests throughout entire regions. The past decade has undoubtedly been the most disastrous for wildlife in the biological history of our planet. The coming decade promises to be far worse. There is no guarantee whatever that the animals our children read eagerly about today—elephants, gorillas, rhinoceros, cheetahs, orangutangs—will exist in the wild, or even exist at all, by the time these children become mature.

In 1966, this committee reported out the first U.S. Endangered Species Act, and established an expressly stated national policy of preventing the extinction of species. That legislation has twice

been strengthened by this committee, in 1969 and 1973. The Endangered Species Act of 1973 is one of the strongest pieces of wildlife legislation ever to have been signed into law. The Convention on International Trade in the Endangered Species of Wild Fauna and Flora, initiated by the United States under the mandate of the 1969 Endangered Species Act, was a diplomatic triumph for our Nation, with great potential for arresting the destruction of many species.

Yet even in this country, even since the passage of the 1973 act, a number of major domestic species, such as the red wolf, the Florida manatee, the laysan monk seal, the Atlantic ridley sea turtle, and the California condor, have moved closer to the final abyss of biological extinction.

Despite our domestic legislation and our membership in the International Convention, U.S. imports of wildlife products have soared in the past few years. Imports of items manufactured from wildlife increased from 1.7 million items in 1972 to 91 million in 1976. Imports of skins and hides rose from 910,000 in 1973 to over 30 million in 1976. As demand has mounted, prices have soared. Prices paid for Grevy zebra hides, for example, increased from \$150 to \$2,000 on the New York market in a few years.

The budget for our endangered species program stands at a fraction of the annual subsidy to many, less defensible programs. An attempt by the Fish and Wildlife Service to achieve a modest budget increase of about 11 million was slashed to about 3 million by OMB, which raised the real question as to the seriousness of the administration's commitment to endangered species.

Now, even before the Endangered Species Act has achieved proper funding and begun to work as the committee intended, section 7 has come under assault in the other body. The effect of signing into law of the amendment passed out by the Senate Committee on Environment and Public Works would be to alter our national policy from one of preventing the extinction of such species as long as they do not interfere with development. This amendment would establish the precedent of permitting a committee of appointed officials, plus the Governor of a State, to deliberately condemn to extinction species which stand in the way of progress.

The justification for this amendment was that certain obscure and unimportant species may hold up dams or other development. The amendment, however, applies equally to all species. It applies to the whooping crane, grizzly bears, manatees, bowhead whales, brown pelicans and southern sea otters as much as to snail darters. Consultations are, in fact, underway under section 7 in the case of each of these species. Each is currently jeopardized by some aspect of proposed or ongoing Federal actions. A single Federal action now under consideration, the issuance of permits for mining of phosphate in Osceola National Forest in Florida, would affect seven endangered species: The Florida manatee, the grey bat, the Florida panther, the bald eagle, the peregrine falcon, the wood stork and the indigo snake, as well as the threatened American alligator.

I regard section 7 as the key provision of the Endangered Species Act for two main reasons: First, section 7 is concerned with preservation of the habitat. While commercial exploitation, now reaching a level of organized extermination in some places, is the major

threat to many species over the short range, the chief long-range threat is the destruction of the habitat. Depleted species can be restored, in many cases at least, if the habitat is available. It is academic whether or not animals are protected from deliberate molestation if their habitat is not preserved.

Moreover, no species can be rationally thought of apart from its habitat. The so-called obscure species which have been involved in the certain recent controversies are, in particular, integral parts of very specific habitats. Their disappearance signals the functional end of the habitat in which they lived; the end, for example, as in the case of the snail darter, of a free flowing, unpolluted water on a river system. These species are thus indicators of the existence of ecologically unique systems.

Section 7 functions, therefore, although sporadically, as an enforcer of biotic diversity. It can also function, incidentally and furtively, as an enforcer of social and cultural diversity by helping to shield communities of humans, farm families and residents of small towns in valleys in the path of development, who face forcible removal to make way for Federal projects.

Second, the act is unequivocal in obliging Federal agencies to comply with its requirements. Grim experience has taught us that Federal agencies will not obey a law which they do not like unless they are forced to. The consultation requirements in the Fish and Wildlife Coordination Act and the Historic Preservation Act have been routinely ignored. The requirements of the Federal Uniform Relocation Act, designed to prevent flagrant abuse of eminent domain powers by development agencies, are disregarded more often than not. Federal agencies are among the most persistent violators of clean air and clean water standards. The Government of Canada, along with our own State Department, regards the Garrison diversion project as being in violation of the Boundary Waters Treaty of 1911.

The conflicts which have thus far come before the courts under the Endangered Species Act illustrated not deficiencies in the consultation requirements, but amazing arrogance and intransigence by the agencies. The FHA was determined to push Highway 10 directly through the habitat of the last remaining Mississippi sand-hill cranes, and thus destroy the species. Court intervention was necessary to achieve simple rerouting of the highway. TVA refused to consult in good faith on section 7, just as it has refused to submit to the requirements of the Clean Air Act.

The establishment of an exemption procedure would inevitably result in agencies remaining intransigent during consultations in order to shunt the decision to a committee where political pressures can be focused. The life or death of species would then depend upon the political situation during the decision period and upon the character of committee members and the committee staff.

It seems to me that to replace biological criteria as the basis for decisions with pork-barrel politics and economics would be an admission to the American people and to the world that the Congress cares more about money and power than about endangered species. It would almost certainly doom innumerable species, both by its direct effects and by its inevitable ripple effect abroad.

It seems to me that it would be far better for the Congress to concern itself with reforming the procedures of the development agencies with which it is involved, and eliminating waste, environmental destruction, abuse of citizens and economirrationality from our public works programs, than to bulldoze aside the Endangered Species Act.

If, in the future, the consultation process can be shown to be inadequate, it is time then, enough time would be left, to change it. In the meantime, Congress should not be stampeded into foreclosing the last chance for the survival of whooping cranes or the Florida manatee because of a conflict involving the snail darter. We should, instead, give the Endangered Species Act the funding and the emphasis it must have if it is to function, and if we are to leave our children the natural heritage which they need and deserve.

Thank you, Mr. Chairman.

Mr. LEGGETT. Thank you very much, Jim. That is very stimulating testimony, and I know it comes from a deep commitment by yourself and your colleagues to the Endangered Species Act passed by this committee. I want to compliment you on the work that you and your colleagues have done in putting together the environmental study group, which is perhaps the best joint House-Senate body which has ever been constructed in this Congress.

The diligent work of your staff, I assure you, is very helpful to the members of this committee and our staff in coming to conclusions, because you are very thorough.

As I understand, we have listed, according to counsel's representations to me, approximately 600 animals at the present time. We have about 107 pending for listing. We have listed some 17 plants, and have some 1,800 plants pending. Presumptively, section 7, requiring interagency cooperation, would apply to both plants and animals. Is that your understanding?

Mr. JEFFORDS. That is my understanding, Mr. Chairman.

Mr. LEGGETT. Of course, the intent of this committee is to protect endangered species. The question is whether you weigh anything against that or not. That is the issue that we have pending currently in the U.S. Supreme Court with the *Tellico Dam* case. The preliminary court decisions in interpreting section 7 are that there is nothing to be weighed against that, no matter what may occur. The endangered species and their habitat are to be precisely protected.

Do you understand that there is any discretion at all under section 7, the way you interpret it, to weigh against determinations made of critical habitat?

Mr. JEFFORDS. My interpretation would be that there is not, and that it was the intent—of course, you are probably better able to state this than I am—that if we were to put ourselves in a position of exterminating a species and making that decision, then that is something that this body and this Congress ought to do by law rather than leave it to some administrative determination.

And the way I would see it is if that situation arose where it was felt that there was some real compelling reason that a species ought to not stand in the way of something, then an exemption

should be granted by Congress and not by the courts or by some administrative agency.

Mr. LEGGETT. Are you aware of the action which has taken down at Quantico with respect to the limitation of base activities down there on behalf of a type of endangered woodpecker? Are you aware of how much of the base is limited by that decision there?

Mr. JEFFORDS. No; I am not. I would be glad to provide that information. I do not have that here.

Mr. LEGGETT. Well, we can get that through other sources. I do not know how much the base is limited. I know the Marine Corps apparently chose to award the environmental commendation to the base commander for his efforts at protecting the woodpecker down there, which is certainly commendable.

So, these are things at which the committee is looking. We want to find out exactly how the law is working and how it is interfacing with other Federal activities. This information is helpful to the committee.

Mr. Forsythe, do you have any questions at this point?

Mr. FORSYTHE. Yes; just a couple. Thank you, Mr. Chairman.

Jim, I join with the chairman and compliment you on your testimony and the commitment that it does represent.

I just want it to be clear—there is no doubt in my mind that I want to see a strong Endangered Species Act, and one that really can provide protection. I think the chairman said that the President's ideas and his implementation just do not quite come to the point of providing for that. I think that your testimony that we should be providing the funding and not change the act at all touches a very significant point.

But I think that we on this subcommittee have the duty to pause and look at the practical problems of the route that we are on and the politics and the institutions which you and I are a part of. I said the other day that if we went today to the floor with the authorization bill, with an open rule, we would lose much more than we really ought to. Frankly, I want to find, if I can, some way to make sure we do not lose. I would go so far as to say that we might lose the act because of some of the heat that the act is taking now from those who just do not see the efficacy of trying to protect every species and subspecies of every plant and animal.

Are we going to have to find some way to keep the act by finding some way to give some assurance that it is not going to overemphasize endangered species, as some people view it?

Mr. JEFFORDS. I certainly share your concern as to what may happen on the floor, and I know with all of the controversy that has risen over Dickey-Lincoln and others that there is a feeling—"Oh, my God, why stop this project because of this little flower or plant?"

But I am hopeful that with the realization that the act is working well—and there has been no evidence that anywhere that there has been an attempt to really follow the act that it has not worked—that that kind of logic will be able to prevail.

I also feel, as I previously stated, that the Congress ought to be willing—if we are going to play anti-Creator and decide how we are going to do away with something that the Great Creator put on this earth, we ought to have the guts to make that decision our-

selves, and it ought not to be frequently done and it ought not to be dealt away to some administrative agency to do.

Right now, there may be two or three things which are in the news media which indicate that they are hindering necessary projects. Well, I would hope that we would not just deal that away this time and give that to some administrative agency, when there is absolutely no evidence that the law is not working in those cases.

Mr. FORSYTHE. Well, that is a point that I really have to challenge you on, Jim. You say the law is working well. The reports of public opinion today are not in concert with that. You say that the law is all right and it is solely the administration that is causing all the problems.

Unfortunately, the solutions to those things often come through legislation. If the law is not working right, you do not really have any other handle, other than by doing something to the law to try and make it work right. At least, I think that would be a general view here on the Hill.

That is, I am sure, what prompted the Senate amendment to provide some final project review. You mentioned that there were 4,500 consultations with only three going to court. That sounds like a very good record, but it distresses me that there really has been no documentation of those consultations as to what they were in depth. What were they in substance? Did somebody just call somebody up and tell them off?

The GAO as you know, is looking at the administration of the act. The shortage of funding is certainly a major problem. Without funding, I think it is going to be very difficult to make it work.

Mr. JEFFORDS. I do not have any real comment to that.

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. John, do you have any comments at this point?

Mr. DINGELL. No, Mr. Chairman.

Mr. LEGGETT. Jim, thank you very much. We could, of course, go over all of your testimony, verse and line. We are going to receive additional testimony from the administration. We are going to find out exactly how well the law has worked, how many of these conflicts have arisen in the past, and how many potentially may arise in various and sundry sectors.

We will also get their views officially on the Cahaba shiner that you commented about and determine whether or not there is a conflict in that area.

Your testimony is helpful and we thank you very much. I understand that colleague Ottinger wants to testify, and when he comes, he will be recognized.

Mr. JEFFORDS. Thank you, Mr. Chairman.

Mr. LEGGETT. Next, we have the Gulf States Marine Fisheries Commission, Mr. Charles Lyles, Executive Director. Mr. Lyles, it is very nice to have you before the subcommittee.

Your statement will be included in the record as though you read it. You can summarize it or read it, as you wish.

Mr. LYLES. If it please the Chairman, I would like to read it, sir.

Mr. LEGGETT. Please proceed.

**STATEMENT OF CHARLES H. LYLES, EXECUTIVE DIRECTOR,
GULF STATES MARINE FISHERIES COMMISSION**

Mr. LYLES. Mr. Chairman, members of the Merchant Marine and Fisheries Committee, ladies and gentlemen, my name is Charles H. Lyles. I am the Executive Director of the Gulf States Marine Fisheries Commission. I am here today not only representing that organization but also the Louisiana Shrimp Association, the Mississippi Coast Fisheries Association, the Alabama Fisheries Association, the Texas Shrimp Association, the Southeastern Fisheries Association, the Shrimp Association of the Americas, and the American Shrimp Cannery Association. These organizations represent just about all the fishing industry in the Southeast. Letters authorizing me to represent these organizations are attached and will be made a part of my testimony.

The fishing industry of the Gulf accounts for over 40,000 jobs directly connected with catching and processing fish and shellfish. We harvest approximately one-third of the total U.S. catch, worth nearly one-half billion dollars at the ex-vessel level. We are indeed an important segment of the economy of the area. Furthermore, this is a renewable basic resource, one of the four basics from which all wealth is extracted. We believe that with proper management this can continue for thousands of years. We support good management policies, for we have several billion dollars in plants, equipment, vessels, and gear. We do not wish to be put out of business for any reason.

It is for this reason that I wish to call to your attention some of the many unreasonable, illogical, and dictatorial aspects of Public Law 93-205 and request that changes be made in this horrendous piece of legislation. It is regrettable that I find myself in a position of opposing this act, since more than 40 years of my life has been dedicated to fishery conservation work in research, administration, enforcement, and teaching. I cite this only to indicate my dedication to this important work. I do not take lightly any matter which interferes with proper management of these resources.

There is, however, aside from the test tube, the microscope, the law book, and the classroom, a pragmatic world in which we must deal with people, their needs, and their problems. I must emphasize the word "needs," for these always take precedence over wants. I am therefore asking that Public Law 93-205 be amended so that it conforms to scientifically accepted biological principles; that the dictatorial provisions be removed so that fair, impartial, and democratic administration is required of those administering the act; and that provisions be made to consider the usefulness of the animal being saved against the cost and the economic impact on people and their needs.

The act should also be amended so that those who are damaged by it have the same recourse as do those requesting that an animal or plant be placed on the endangered species list. We would also like to see an accounting of the costs of this act in Government funds spent on all phases of its administration, and in lost jobs and lost life because of construction delays.

My discussion centers around two major points. These are: First, Public Law 93-205 has as its main intent the creation of a static condition in a dynamic world, a condition that is not consistent

with the natural development of this planet. The Earth is often referred to, in popular terms, as the terra firma. Nothing could be farther from the truth. We actually live on a comparatively thin crust encasing an enormous ball of fire. Bits and pieces of this crust drift around over these flaming gases, pushing up new mountain ranges, creating new continents and rivers, and dividing forever whole races of animals and plants. These creatures adapt to the changing conditions or they perish.

This process has been going on for a long, long time, for we find embedded in the crust of this planet evidence of the disappearance of numerous species of both plants and animals. These animals simply reached the end of their biological limb and dropped off. They became extinct. The best known and most often quoted case is the dinosaurs. These creatures disappeared because they could no longer adapt to changing world conditions.

Had Congress been in session, and had Public Law 93-205 been in force, we could have written the Government buildings full of environmental impact statements and we could have created an enormous bureaucracy and spent billions of dollars, but the dinosaur would have disappeared. They had reached the end of their existence on this planet. This is as it should be, for the orderly process of this planet is that only those fit to survive will survive. Public Law 93-205 creates a situation where the United States is attempting to overrule the process of nature.

Let me comment on some aspects of section 4(a) of Public Law 93-205. This section states that the "Secretary shall by regulations determine whether any species is an endangered species or a threatened species because of any of the following factors: Item one, the present or threatened destruction, modification, or curtailment of its habitat or range."

Gentlemen, I ask you, what do we do in the case of earthquakes and hurricanes. These natural disasters can and do change the face of the Earth far more in a few hours than man can in a year. Are we to assume, because a species has been so threatened by natural disaster, that we must immediately begin to spend enormous sums of money to undo what nature has done in order to protect the animal? This is foolhardy and should not be attempted, because it interferes with nature's way of selecting those most able to survive and because it is a wasteful and futile expenditure of public funds.

Furthermore, it has been my experience, over the past 40-odd years, that a change never destroys the capability to sustain life. What really happens is that a different set of animals takes over. We had a record harvest of shrimp in the Gulf last year. This was, in my opinion, caused in part by many of the changes that have been made over the past 40 years which allowed warm salt water to enter the marshland, thus nurturing the post larval shrimp.

I do not wish to go into great detail, but I could cite several other examples where changes brought new population or aided one animal to gain dominance over another. When changes occur, whether they are natural or manmade, there will be a change in the animal population. To try to aid the disadvantaged population may be dangerous, and a thorough evaluation should be made before any action is taken.

Item two of section 4(a) specifies overutilization for commercial, sporting, scientific, or educational purposes. The question is, first, what is meant by "overutilization." In my work in fisheries, I find few instances of proven overfishing to the point of exterminating a species.

The shrimp fleet in the Gulf of Mexico and the South Atlantic is presently being charged with extermination of the sea turtle, several species of it. National Marine Fisheries Service and the Fish and Wildlife Service recently published notice in the Federal Register of the intent to revise the rules regarding the taking of these turtles. It was obvious they had their collective minds already made up, because they only gave 17 days to comment. By the time I got the available data, there were 5 days remaining in which to analyze two sets of biased data and come up with an unbiased position. I refused to comment, because nowhere could I find convincing data that trawls are a major contribution to the turtle's demise. I am reasonably convinced, however, that with data from those who would protect the turtle, on the one hand, and on the other hand, data from the fishermen who want to continue to make a living in the ocean, that no valid conclusion can be reached. However, with the Department of Commerce competing with the Department of the Interior as to who will be the shining knight in armor that protects the turtle, fact and reason have little chance of survival.

As you gentlemen well know, the turtle is under the jurisdiction of the Department of Commerce while at sea, and as soon as he steps on shore, he is under the Department of the Interior. I wonder how much of this the poor turtle understands.

Suffice to say, few species have become extinct because of fishing operations. I am told by some scientists that they are unable to take specimens for study in cases where a species has been declared endangered, and that this prevents organized research determining what can be done about the animal's demise. In this connection, I understand, Dr. Stephen Edwards, Secretary of the Association of Systematic Collectors, has requested permission to testify on this subject later this month. I hope you will give this gentleman sufficient time to fully develop the case.

Suffice to say that commercial operations and scientific research is not the problem. The problem lies in inadaptability to a changing environment. Of all the animals that have disappeared from this planet, I would estimate that less than one-thousandth of 1 percent has been caused by man.

Item three of section 4(a) states that an animal may be threatened by disease and predation. This section is so ridiculous that it hardly bears comment. It attempts to legislate against natural selection. Disease and predation both have a tendency to take the weaker animals, and this is good. Only those capable of surviving should survive. We can exhaust the Federal Treasury trying to care for sick animals and those threatened by predation, but without success.

In summary, what section 4(a) does is to attempt to override the rules of survival of the fittest and create an expensive Government medicare program for animals that become threatened in this world of hazardous living. It sets the stage for an enormous bu-

reaucracy. With the very foundation of this Government being shaken by inflation, can we ask the taxpayer to support such an unscientific experiment with an undemocratic legal structure that imposes hardships on the economy?

The second point that I wish to make deals with the awesome power this statute has given a Government agency over the people and their welfare, and there is no recourse for those damaged by its impact. Nowhere in the statute is consideration given to the needs of people. There are numerous instances where construction of dwellings, highways, and other projects have been halted because this law protects some animal that has no value in the biological chain and no economic importance to man. Had Public Law 93-205 been in existence in 1840, we would still be grazing millions of buffaloes where we grow wheat and corn today. We need that vast area to care for the needs of the people. Public Law 93-205 does not permit this.

Let me refresh your memory about 40 sandhill cranes in Mississippi. For the last 5 years, the Interstate 10 highway has been held up across Jackson County because it approaches an area used by 40 sandhill cranes. Now mind you, these 40 cranes are the same species hunted as legal game in other sections of the county, but because they do not migrate, they have been classified as a physiological strain. Only an experienced ornithologist can tell the difference between this crane and those that migrate in other areas. These birds have been declared an endangered species, a move that required a vast stretch of the imagination. As a result, Interstate 10 is held up. The only other east-west highway across this area is Highway 90, and all traffic must use this artery. The result is a highly congested artery that is now considered the second most dangerous piece of highway in the United States. Twenty-six to 30 people are killed on this 30 miles of roadway annually, many of which are the result of congestion caused by an incompletd highway.

Gentlemen, can we justify the taking of one human life to protect 40 sandhill cranes of dubious ancestry? Furthermore, there is no positive proof that these birds would not move farther away if the highway were completed. If they are adaptable, they will move; if they are not, they should perish.

I did not mean to get into the construction areas, as I am more concerned with natural resources and their use for people, but the crane case is such a bizarre case of disregard for human life and welfare as a result of the use of this act that I felt it should be covered. I cite this case only to point out the unreasonable and arbitrary features of this piece of legislation and as evidence that the statute has no regard for human life.

We are, in my opinion, on the verge of an era of expansion in mariculture. This will require altering some of our territorial sea in order to make full use of the potential, just as farmers have altered the land in order to increase crop yields and expand acreage. Public Law 93-205 is so inflexible it will not permit altering any area if it endangers one species of an unimportant plant or animal. The U.S. farmer has produced abundantly because he has had a good farm program, recent events to the contrary notwithstanding, and his labor has fed much of the world. Our very safety

is at stake in this starving world and we can ill afford laws which impede the development of mariculture. Public Law 93-205 will do just this. I can assure you, gentlemen, that with a half dozen good biologists, backed by this inflexible law, I can halt about 90 percent of the construction in this country, to say nothing of farming, fishing, mining, and lumbering.

Finally, the Endangered Species Act, as it stands today, presents serious problems concerning the ordinary principle of administrative delegation. The act is completely biased and contains no provision for checks and balances whereby human factors can be given their appropriate weight. The basis for determining whether fish, wildlife, or plants should be classified as endangered, as embodied in section 4(b), contains no criteria or guidelines as to the relative importance of the fish or wildlife, as contrasted with the human behavior which may be affected by its classification as endangered. Section 4(b) of the act desperately needs to be amended to give consideration to the question of what kind of organism is involved, plus the inconvenience and cost to human beings that will result if a particular creature is to be preserved.

We also find totally unsatisfactory the present safeguards involving public participation in the process to classify any fish, wildlife, or plants as endangered. The published requirements in the Federal Register and a discretionary hearing before an agency with unquestionable bias that has tentatively determined a species to be endangered is not a fair trial. This is the kind of pseudodemocracy which the majority of Americans find objectionable, because it is designed merely to appease the public while preserving the biased institutional policies of an agency.

I am reminded of an article by Dick West of United Press International which speaks to the situation we now find ourselves in over Public Law 93-205. Mr. West, in his discussion of a Japanese university research project to test the theories of how the pyramids were built some 4,500 years ago, raises the very real question of whether the pyramids could, in fact, be built today.

Let us use as a case in point the Great Pyramid erected at Giza as a tomb for the late King Khufu. It took 400,000 peasants 20 years to complete the structure, which included two million stone blocks, each weighing more than two tons. If current conditions were made retroactive, the first step in Khufu's entombment would have been the preparation of an environmental impact statement.

A number of questions would need answering such as: Would a stone polyhedron with a polygonal base and triangular faces meeting in a common vertex, 481 feet in the air, pose a menace to aviation, or, suiting the question of the times, was there a danger that Ra, the Egyptian Sun God, might snag the top of the Pyramid with the wheels of his fiery chariot; and what of the Ibis and other birds native to the area—were they in danger of colliding with the pyramid the way American birds keep banging into the Empire State Building?

And as they were about to lay the first stone, it might be discovered that the 13-acre site was the sole breeding ground for the Egyptian sand flea. Construction would then be halted pending a study to determine whether the sand flea could be trained to breed in another area. By the time the camel drivers hauling provisions to the site went on strike, my guess is the pyramid builders would have said, "The hell with it," and had King Khufu cremated.

As previously stated, I have the unanimous support of the fishing industry in the Gulf States and our recommendations are that Public Law 93-205 be amended: First, to create a review board outside the Department of Interior, whose duty will be to review each species before it is placed on the threatened or endangered

species list; that said board be required to produce a cost-benefit ratio of placing this animal or plant on the endangered species list, and that it must consider the impact on jobs, income, and food; that said impact not be limited to Government projects; that said board be required to determine the biological significance of the loss of the animal or plant to the total biomass.

Four, the Endangered Species Act provides ample opportunity for citizen suits to classify an animal as endangered under section 11(a). We would recommend that similar citizen suits be permitted to challenge classification of a fish, wildlife, or plant in the same identical manner that the Secretary of Commerce or Interior can initiate action, as set forth in the existing act. We recommend a judicial hearing within the Federal court system, rather than one before a biased Agency which made the interim classification, and we suggest that attorney's fees be allowed those who would challenge the action as is presently permitted citizen suits under section 11(a).

Mr. LEGGETT. Thank you very much, Mr. Lyles. I think that before we proceed with questions, we might interrupt here for our colleague, cochairman of the Environmental Study Conference, the very distinguished Richard Ottinger.

Dick, you can testify from right there at one of those microphones or you can go down to the witness table, as you wish. We have already heard from your colleague, Congressman Jeffords.

STATEMENT OF HON. RICHARD L. OTTINGER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. OTTINGER. I thank you very much, Mr. Chairman, and I am sorry to have been late for the commencement of your hearings. I got caught in another committee, as is our wont.

Mr. LEGGETT. I know; we all have other things to do.

Mr. OTTINGER. I am pleased to have this opportunity to appear and to share with my colleagues my great concern for the future of the Endangered Species Act. This act is profoundly significant for our country, and is certainly one of the most important of our environmental laws.

Congress, in its wisdom, in 1973 acted upon the recognition that the pressures of population growth and concomitant development necessitated some form of protection for our precious resource bank of biological diversity. In passing this law, it required us to pause and weigh the consequences of our acts for the biological chain of which we are a part, for fear that our failure to do so would render us an endangered species.

Mr. DINGELL. Mr. Chairman, I do not mean to interrupt, but I have some questions of Mr. Lyles.

Mr. LEGGETT. Well, certainly, he is not subpoenaed. We would ask him to stay. Are you able to stay, Mr. Lyles?

Mr. LYLES. Sure.

Mr. LEGGETT. Very good.

Mr. OTTINGER. The Endangered Species Act is a tool by which we have agreed to preserve the great biological diversity of our natural heritage for future generations of Americans.

Seemingly insignificant creatures, whether endangered or not, have proved exceedingly useful directly to humankind. Blood research on the horseshoe crab is one example, and has provided us with significant information on blood coagulation.

Endangered species often provide us with a measure of the vitality of a particular ecosystem; where a species is endangered, it provides a bellwether for the possible endangerment of the entire habitat.

The snail darter, for example, despite its bad press, showed us that the Little Tennessee Valley is the last remaining place in Tennessee where such high quality habitat exists that has direct human and economic importance. The snail darter's extinction in other Tennessee rivers indicates, clearly, a diminished vitality and diversity of ecosystems.

A recent discovery of a sponge off the coast of Florida in the Bahamas revealed to us an organism unique in its own self preservation, and one which can contribute directly to human health. Because this small sponge is subject to encephalitis like we humans, it needed to develop antibodies to save itself. Scientists have now discovered that the antibodies can be extracted and utilized for curing viral infections in humans, including smallpox, and perhaps even the common cold.

In fact, the newly discovered substance is the only truly safe antiviral medicine which does not kill off other than the diseased parts of the cell and is being regarded as a discovery equivalent in importance to that of penicillin. If we had destroyed the sponge, we never would have had a biological model from which to synthesize this new wonder drug. I would like to submit for the record two interesting articles on the subject which appeared in *Science News* and the *Charleston Gazette* last August. I will submit them with my testimony, if they could be included.

Mr. LEGGETT. Those are the two articles appended to your testimony?

Mr. OTTINGER. That is correct.

Mr. LEGGETT. Those will be included in our record, Dick.

[The following were received for the record.]

[From the Charleston, W. Va. Gazette]

FIRST ANTIVIRUS DRUG HAILED AS SUCCESS

Copyright New York Times Service

BETHESDA, Md.—Federal medical researchers reported Wednesday the discovery and successful experimental use of the first true antiviral drug, an achievement the scientists equated with the discovery and use of the first antibiotic, penicillin.

Officials of the National Institute of Allergy and Infectious Diseases, a branch of the National Institutes of Health, said the new drug has been highly successful intreating a small number of cases herpesvirus encephalitis, a disease that destroys the brain.

The drug, named adenine arabinoside, or ara-A, was termed by Dr. Richard M. Krause, the director of the allergy institute, as "a major advance in the treatment of serious viral disease."

Derived from a sponge found in the waters off Florida and the Bahamas, the drug was developed in a collaborative effort involving the institute, a group of American laboratories and clinical centers, Parke, Davis & Co., a Detroit pharmaceutical house, and two French scientists who first suggested its possible antiviral properties.

Krause said the use of ara-A was "the first successful treatment of a life-threatening viral disease." However, he and the six other scientists at the news conference

here said that they believed the implications of the development were much more far-reaching than the successful treatment of a brain disease that, while generally fatal, is relatively rare.

The broader possibility, they said, was that it and similar agents could be used to cure a wide variety of viral diseases, ranging from smallpox to the common cold.

Antibiotics such as penicillins and tetracyclines are effective only against diseases caused by bacteria.

The problem of viral diseases is immensely more complicated than that of bacterial diseases because viruses must get inside a cell to grow and replicate themselves. Thus, to prevent a virus from multiplying and producing disease, an agent had to be found that would penetrate the cell wall without harming the cell itself.

The search for such an agent has been under way since 1941 when penicillin was first found to be effective against some types of bacteria. The discovery of the beneficial effects of penicillin and other antibiotics has revolutionized the practice of medicine.

As described at the news conference, adenine arabinoside was isolated 20 years ago from a variety of Caribbean sponge, *cryptothetia crypta*, during a routine investigation of chemicals that might be effective against cancer.

Dr. Charles A. Alford, Jr., a professor at the University of Alabama Medical Center, said the chemical was a member of a class named purine nucleotides that has been suspected of producing anticancer activity.

"But of the 300 agents tested, it was the only one found to tackle viral infections without damaging the cell itself," Alford said.

Two French scientists, M. Private of Garilhe and J. De Rudder, were credited by the federal researchers with first suggesting that adenine arabinoside might be used against viral infections.

[From the Science News, Vol. 112, Aug. 1977]

ANTIVIRAL DRUGS: POSSIBILITIES AGAINST HERPES

Unlike the development of antibiotics back during the 1940s and 1950s, the creation of antiviral drugs has been slow in coming. A primary reason is that antibiotics attack bacteria in the bloodstream without hurting cells. Hence, antibiotics are safe as well as effective. Antiviral substances, in contrast, have trouble killing viruses without also harming the cells they infect.

Nonetheless, medical scientists are finding or designing drugs that attack viruses selectively, that is, by largely or even totally sparing the cells that house them. Two of these drugs look especially promising in the treatment of more serious viral diseases, those that strike the body internally. One is Virazole. It has successfully countered flu in both animals and humans (SN: 3/20/76, p. 187). The other is adenine arabinoside or ara-A, which also goes by the trade name of Vira-A.

Last year, ara-A was found to lessen pain and to accelerate healing in immunosuppressed patients with herpes zoster infections. Herpes zoster can be extremely debilitating and sometimes fatal. Now ara-A has dramatically reduced both death and neurological damage among herpes encephalitis patients, thus constituting the first effective treatment of a life-threatening viral disease. Previously there was no way to counter this highly fatal brain infection that strikes several thousand Americans a year.

The study demonstrating ara-A's effectiveness against herpes encephalitis was conducted by Richard J. Whitley and Charles A. Alford of the University of Alabama at Birmingham and by researchers at both Alabama and 14 other medical centers. They describe their findings in the Aug. 11 *NEW ENGLAND JOURNAL OF MEDICINE* as a "breakthrough in systemic antiviral therapy." Richard Krause, director of the National Institute of Allergy and Infectious Diseases, hailed the results as a "major advance" at a NIAID press conference last week. NIAID financed much of the study.

Encephalitis due to herpes simplex virus is the most common cause of sporadic fatal encephalitis in the United States. If victims do manage to survive the disease, they are usually left with permanent neurological damage. So medical investigators attempted to treat it with two experimental antiviral compounds—idoxuridine and cytosine arabinoside. Idoxuridine looked promising until studies showed clear-cut toxicity without efficacy. That is when Whitley, Alford and their colleagues began conducting a clinical trial to see whether another experimental antiviral drug, ara-A, might be both effective and safe in the treatment of this disease.

For patients to be enrolled in this trial, they had to first show symptoms indicative of herpes simplex encephalitis, such as altered consciousness, fever, personality

change, memory loss, headache and vomiting. Herpes brain infection then had to be tentatively diagnosed with electroencephalograms, arteriograms and computerized axial tomography brain scans. Only if these procedures indicated that a herpes brain infection was present did patients then undergo brain biopsies. A biopsy consisted of drilling a tiny hole in that area of a patient's skull where herpes infection was suspected and withdrawing a bit of brain tissue for viral examination.

Twenty-eight patients proved to be brain-biopsy positive for herpes infections. Eighteen of these patients received ara-A, 10 a placebo, for a 10-day period. All of the patients were monitored daily for progression of disease, and clinical observations were recorded at five-day intervals for one month or until death. Follow-up exams, performed at 2, 3, 6, 12 and 24 months, focused on improvement or deterioration in neurological function.

Ara-A not only significantly reduced death among the patients, from 70 to 28 percent, but also the amount of permanent disability. Four of the surviving 13 drug-treated patients are now fully recovered, in contrast to only one of the three surviving untreated patients. What's more, these improvements were achieved without evidence of acute toxicity, such as damage to bone marrow, liver or kidney.

Ara-A had its origin 13 years ago when two French scientists screened a battery of plant and animal substances from land and sea for possible anticancer activity. Adenine arabinoside, from a Caribbean sponge, did little to retard the growth of cancer cells, the researchers found, but it did possess antiviral activity. So scientists at Parke, Davis and Co. in Detroit developed the chemical into an antiviral drug, and medical investigators began exploring its possible effectiveness against various herpes diseases.

Like some other promising antiviral drugs, ara-A appears to inhibit virus functions while partially sparing cellular ones. Whether it is free enough from toxic effects to be approved by the Food and Drug Administration for use against herpes encephalitis remains to be seen, though. The drug is known to harm bone marrow if used in large enough dosages. It has also triggered birth defects in the offspring of experimental animals and liver tumors in rats. However, the FDA did approve it earlier this year for external body use—specifically, to treat herpes infections of the eye.

Currently, only two other antiviral drugs are on the American market—idoxuridine, also for topical treatment of herpes eye infections, and amantadine, which has actually been approved by the FDA for preventing, rather than treating, a particular strain of flu.

Mr. OTTINGER. I simply cannot see the great need to amend an act which for 5 years has been the basis of very numerous and delicate negotiations to accommodate our developmental progress to the goal of conserving our biological diversity. For 5 years, this act has succeeded in producing harmonious resolutions of these conflicts with only one notorious exception—the *Tellico Dam* case, and two lesser ones.

Why now, after 5 years, is pressure surfacing to weaken the act? I think Congress needs to face this issue honestly. I have heard from a few quarters that we did not have in mind saving snail-darters and insignificant weeds when we passed this act. As I indicated earlier, no members of the biosphere should be regarded as "insignificant"; they inevitably are not.

As an early opponent of the *Tellico Dam* proposal in the mid-1960's, I must remind this committee that the trouble with the project was not the snaildarter, but a whole raft of questions relating to the spending of \$120 million on a project which would produce negligible power or flood control, and turn a magnificent agricultural valley into an unneeded recreational lake in an area with more miles of lakefront than the Great Lakes.

This Congress has a responsibility to curtail its wasteful spending on questionable projects, and it is clear that most, if not all, of the projects that are heading into trouble with the Endangered Species Act are in trouble in other areas—questionable cost-benefit claims, environmental damage being ignored, adverse economic im-

pacts, refusal to consider other less costly, more environmentally sound alternatives, et cetera.

In my view, what is happening here is that the public is questioning the value of many proposed projects. The question should not turn on whether to save a species alleged to be standing in the way of progress, but rather whether to build questionable projects with taxpayers' dollars.

If we weaken this law protecting endangered species, there is no way of assessing the damage to the biosphere which may ensue. This is a very dangerous road to travel when we consider the consequences of man's first conscious termination of species.

As the pressures of population and the complexity of our problems increase, humankind will need the diversity of the world's species increasingly to help unlock the secrets of nature itself for human benefit. We have barely begun to tap the vast potential of the biological resources of our planet. Now is certainly not the time to retreat in the face of the immediate discomfort.

We should be planning our progress in harmony with the preservation of our natural resources. Let us at least give this excellent law another 3 years of authorization, unencumbered with weakening amendments, and a chance to prove its merits to society. It is a law I believe our children will be profoundly grateful to us for having had the prescience to preserve.

In response to the testimony I just heard from Mr. Lyles, I would point out that in a great many instances, the very fisheries which he represents are threatened by the extinction of the food chain that goes to feed those fish and make them available to the people he represents.

We have had a number of very dramatic incidences of that on the Hudson River in the communities that I represent, where there was a real threat—a number of real threats—to the organisms that support aquatic and marine life and provide future food supply for the human race.

To put this on the basis that it is an insignificant species versus the benefit of man, I think is a great oversimplification. The benefit of man is very, very much involved in what we do to the other species in the biological chain.

I thank you for this opportunity to appear.

Mr. LEGGETT. Thank you very much, Dick. You have commented on Mr. Lyles' testimony, so it is fair that he ought to be able to respond for a second to yours, if you would care to, Mr. Lyles.

Mr. LYLES. Yes. I know of no species that we harvest in the gulf commercially today where the food chain is endangered. As a matter of fact, the menhaden production has been going steadily up; it is at the base of the food chain. It has been going steadily up; it has exceeded the maximum sustainable that I estimated from calculations in 1960 on three occasions in the past 7 years.

We set a record last year with shrimp production. Our oyster fisheries are in some trouble, not because the organisms are not there, but because pollution problems prevent them from being ingested by humans, for fear of the outbreak of diseases.

Mr. LEGGETT. I think that is a fair comment. Under our procedure now, what we will do is we will examine Mr. Ottinger, and then we can go back to question Mr. Lyles.

I take it, Dick, that you do not believe that any amendments to the law are in order. I am sure that you can envision all kinds of problems with any amendments. This law, which was authored by my distinguished colleague on my right and others, basically has worked well. It has certainly helped and complemented the Marine Mammal Protection Act.

You are aware of the fact that there is an endangered woodpecker down at Quantico, which Mr. Beard has talked about before the Subcommittee, and that has required that part of the base be abandoned. That base is certainly not critical to our national defense.

It is possible that a critical base may have to be deactivated because critical habitat is found there. So, the question would be, can that be done in the present legislation, or do we need an act of Congress to take care of something like that.

Mr. OTTINGER. Well, I think that our experience in the first 5 years of the Endangered Species Act has not raised that kind of specter. As I say, most of the projects that have been challenged have been very questionable, indeed, on their merits.

There would be no catastrophic consequence of not proceeding with such projects. They are very controversial as to whether they should have proceeded in the first place. I think that we ought to have a greater base of experience before we go and tinker with the act, considering that what we are tinkering with is very basic to the whole chain of life on which we depend.

And we are finding out as the years go by that many of these so-called "insignificant" organisms, as I cited in my testimony, are very significant, indeed, for our own well-being.

Mr. LEGGETT. Of course, the point is that the act was not intended to be used to stop public works projects we do not like. I questioned Secretary Herbst about the Tellico project, which is obviously foremost on all of our minds, and he indicated that irrespective of the Endangered Species Act, he was against the project.

Well, that does give me reason to pause to determine whether or not we ought to know exactly where we are going and target this legislation in such a way that we do not accomplish unintended benefits.

Mr. OTTINGER. I do not think that the value of the Endangered Species Act is that you can stop projects that are otherwise undesirable. I am merely pointing out that in those cases where projects have been held up, the consequences of that have hardly been catastrophic. Indeed, there has been considerable question as to the merits of the project to start with.

Mr. LEGGETT. I am not going to get into an argument with you on that. We have a lot of numbers on it. I think it is almost beside the point before this committee, though it is the thing that stimulates our interest.

John, do you have any questions?

Mr. DINGELL. No questions, Mr. Chairman. I do have questions of Mr. Lyles.

Mr. LEGGETT. Mr. Oberstar?

Mr. OBERSTAR. No questions, Mr. Chairman.

Mr. LEGGETT. You just do not spark any interest at all here.

Mr. OTTINGER. I assume that is because everybody agrees with me.

Mr. LEGGETT. Thank you very much, you have been very helpful.

Mr. OTTINGER. Thank you, Mr. Chairman.

Mr. LEGGETT. Now, Mr. Lyles, I would just ask you this: You indicate that Darwin's theory ought to prevail in this area, and what species survive, survive, and what do not will necessarily meet their environmental termination.

Certainly, we are trying to change some of the natural environment in the aquaculture program, which is of critical importance to this committee. We have authorized a multimillion-dollar bill to try to get our shrimp industry redeveloped, and certainly that will help your fishermen.

Were we not to do that, our salmon might be almost an endangered species and our shrimp industries would not be as healthy as they are. They are going to need some beefing up, with the restrictions that the Mexicans are putting on our fishing effort in the gulf.

So, if it is worthwhile to beef up fish species that are used in the food chain for their perpetuation, why is it not worthwhile to take some precautions to perpetuate other species which have proven over a period of time to be of some benefit, either in the ecological chain or in direct relation to human health and welfare?

Mr. LYLES. Mr. Chairman, I did not say not to do this. What I did say was that we ought to take a look at the importance of these animals in the total biomass to determine whether we want to spend an enormous sum of money taking care of an animal that may have a little or no place, you might say, in the total biomass.

I did not say that I did not favor the Endangered Species Act. I merely said that we ought to put some safeguards on this piece of legislation so that people can be considered a little bit, rather than just the animals.

Mr. LEGGETT. Of course, we are only spending as I understand it, something like \$16 million on the endangered species program this year. Is that correct, counsel?

Mr. THORNTON. Yes.

Mr. LEGGETT. We are not spending an extraordinary amount of money on this program. As I understand it, those regulations concerning the sea turtle have been extended and extended and extended, so that, in fact, we have not had precipitous action taken by the administration.

Is that right, generally?

Mr. LYLES. I have not communicated with the National Marine and Fishery Service since the time expired, the reason being that I did not consider the two sets of data very valid. They were both prejudiced; one in favor of the fishermen, and one in favor of the people that would protect the turtles.

I could find no evidence in there that there had been overfishing. So, I did not comment, because I only had—well, the time expired before I got through with them.

Mr. LEGGETT. We will have the administration before the subcommittee and they can testify specifically on that. As I understand it, there are about six kinds of turtles, and one is generally classified

to be endangered, and the others are either threatened or being considered for threatened status.

Mr. LYLES. Let me say just a word, though, about the \$60 million spent on the administration of this. I think if you will check the budget of the National Marine and Fishery Service—

Mr. LEGGETT. I said \$16 million.

Mr. LYLES. 16 million; I am sorry, sir.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. I do not have any questions.

Mr. LEGGETT. Mr. Dingell?

Mr. DINGELL. Thank you, Mr. Chairman.

I was intrigued by your comment, sir, with regard to the question of judicial review. If I read your statement correctly, you are telling us that there is no way that a person who does not like the listing of an endangered species can get his question before the courts. Is that what you are telling this subcommittee?

Mr. LYLES. That is the way I understand the law, and I have had a couple of attorneys look at it and they tell me that you have to appear before the agency. Once the animal is classified as endangered, you have no recourse under the act.

Mr. DINGELL. You see no way for an individual to represent his case in court then?

Mr. LYLES. That is the way I understand it.

Mr. DINGELL. Will you tell me where that is in the statute?

Mr. LYLES. There is no prohibition in the statute but once it is declared endangered any court action is futile.

Mr. DINGELL. There is no prohibition in the statute. Are you unaware of the other provisions which allow judicial review as a matter of constitutional right to citizens and which allow these matters to be appealed by a person who is affected? Are you unaware of those statutes?

Mr. LYLES. I am not familiar with that, no, sir. Only to the extent that section 4(ii) permits a hearing before the agency.

Mr. DINGELL. Would you be surprised if the Federal rules permitted you to enter a piece of litigation after it had commenced on the grounds that you were affected by the outcome?

Mr. LYLES. I would be surprised.

Mr. DINGELL. You would be?

Mr. LYLES. Incidentally, I read the act for the first time about 3 weeks ago, and I read it through a dozen times or more.

Mr. DINGELL. You are an attorney?

Mr. LYLES. No; I am not an attorney.

Mr. DINGELL. But you have been advised by attorneys?

Mr. LYLES. I have discussed it with a couple of attorneys.

Mr. DINGELL. I would suggest that you quest elsewhere for legal advice. It does not appear that you have been getting very good advice, because there are provisions, not only in this statute but in others. I would point out to you that the section about which you complain permits any person, regardless of whether he agrees or not, to enter into the citizen's suit. Are you aware of that?

Mr. LYLES. No; I am not.

Mr. DINGELL. Does that come as a surprise?

Mr. LYLES. I do not have the law, but I will get it.

Mr. DINGELL. Well, you have described it in considerable detail, and I assume you must have been familiar with what the statute says.

Mr. LYLES. Yes; I surely have.

Mr. DINGELL. Well, you apparently missed this point. Did you? [No response.]

Mr. DINGELL. Did you miss this point, that the citizen's suit provisions apply to both those who favor a listing of an endangered species and those who do not favor such a listing?

Mr. LYLES. I do not believe I missed any points, Mr. Dingell.

Mr. DINGELL. Did you see these points? Would you like me to read them to you?

Mr. LYLES. I had attorneys going over it with me, so I was pretty sure that if it had been there, they would have advised me, and they advised me that it was not there. And I asked them for advice in the matter.

Mr. DINGELL. You did not read the citizen's suit provisions, then, to find that you could enter as a litigant under the citizen's suit provisions, both for and against the listing of an endangered species, is that correct?

Mr. LYLES. Do you mean to halt an animal from being placed on the endangered species list?

Mr. DINGELL. Yes; that you can go to court and you can enter a suit either as a plaintiff to ask that the animal not be listed, or that the animal do be listed, and you can go to court and can challenge the behavior of the Secretary.

Mr. LYLES. What section is that, sir?

Mr. DINGELL. Well, let me read it to you:

Except as provided in paragraph (2) of this subsection, any person may commence a civil suit on his own behalf to enjoin any person, including the United States, and any other government instrumentality or agency, to the extent permitted by the Eleventh Amendment of the Constitution, who is alleged to be in violation of any provision of the act or regulation issued.

Now, that means that you can go in and say that he is behaving wrongly. You are unaware of that section? You have complained at length about it. Are you unaware of it?

Mr. LYLES. I will reread it.

Mr. DINGELL. I would recommend it to you.

Mr. LYLES. I will reread it.

Mr. DINGELL. Are you unaware of the fact that the Federal rules and the statutes of the United States permit you to enter and to litigate questions regarding actions by the Government, and to enjoin actions which are frivolously, arbitrarily, or capriciously carried forward?

Mr. LYLES. I can only tell you I will reread it.

Mr. DINGELL. I am asking you a different question. Are you unaware that the statutes of the United States permit you to go in and challenge actions which are frivolously, arbitrarily, or capriciously carried out by administrative agencies?

Mr. LYLES. Mr. Dingell, I do not know all of the statutes; I am not a lawyer.

Mr. DINGELL. I am just asking you, are you unaware?

Mr. LYLES. I always felt that I had a pretty fair chance in the courts if I got into it.

Mr. DINGELL. You are either aware or not aware. Your statement indicates you are unaware.

Mr. LYLES. Well, I am not.

Mr. DINGELL. You have complained in some detail about species that are appearing on the endangered species list. Perhaps you could give us a better perspective as to how you feel, if you were to advise us, if you please, as to what species you believe ought to be on the endangered species list, and what you believe should not.

Would you like to begin by telling us what species are on the endangered species list that ought not to be, or what are proposed for listing that ought not be on the endangered species list?

Mr. LYLES. I did not deal with that, sir.

Mr. DINGELL. Well, would you like to deal with it now, because I find it interesting?

Mr. LYLES. I am afraid I do not have available that kind of information with me.

Mr. DINGELL. Well, you have given us, I think, rather carefully prepared testimony, and I await with some interest your judgment as to which species are worth having listed as endangered species, and which are not.

Now, can you tell us, first, which species you would not list on the endangered species list?

Mr. LYLES. I believe I said that in declaring a species endangered, the matter should be reviewed to determine the value of this animal in the biomass. I do not believe that there is any provision for that.

Mr. DINGELL. Now, you have indicated that you feel that there are some species that ought not to be listed on the endangered species list, and I ask you now which species you would not list on the endangered species list as not having any worth to the human being.

Mr. LYLES. Mr. Dingell, I do not believe I said that——

Mr. DINGELL. Well, do you agree with that statement, or do you disagree with that statement?

Mr. LYLES. Which statement is this, now?

Mr. DINGELL. That you feel that certain animals ought not be on the endangered species list because they are of no worth to mankind, and so they ought not have the protection of the statute; now, do you agree with that statement, or do you disagree with it?

Mr. LYLES. I made that statement in my speech?

Mr. DINGELL. You did, at least as I read your statement. If you did not make it, you may so inform me.

Mr. LYLES. I believe I said that we should amend the law to determine what species are of value to the biomass before we place them on the endangered list. Now, I am not saying that we should not place animals on the endangered list.

Mr. DINGELL. I am asking you to cite a species of animal that you do not believe should be on that endangered species list.

Mr. LYLES. Well, I do not really know.

Mr. DINGELL. You do not? Do you feel that there are any that should be?

Mr. LYLES. I do not know that.

Mr. DINGELL. You do not? Do you feel that there are any that should not be?

Mr. LYLES. I just cannot tell you. I would have to study the animal and his biomass relationship before I would be in a position to say.

Mr. DINGELL. Well, why did you make the statement without study or preparation?

Mr. LYLES. Because I do not think the safeguards are in the law to determine whether the animal has any relative importance.

Mr. DINGELL. Well, you complain in considerable detail about the inability of a citizen to be heard. Yet, I have pointed out, both in the statute and elsewhere, where you have a right to enter this litigation.

Mr. LYLES. No, I did not say the citizen did not have a right to be heard. I said the citizen is to be heard before an obviously biased agency which makes the determination in the first place. Now, that is what I was complaining about.

Mr. DINGELL. Well, you also said that you had to go before the agency to be heard; I said that you do not, and you were unaware of that.

Let me ask you, you complained at considerable length about the buffalo. If you were back in the 1860's, or 1870's, or 1900's, would you list the buffalo as an endangered species?

Mr. LYLES. I do not know.

Mr. DINGELL. You do not know. Well, would you not list it as an endangered species?

Mr. LYLES. I do know that if we had the law then, that we probably would have difficulty plowing up the prairies and planting corn, and that is the statement that I made.

Mr. DINGELL. It just so happens that there were so many buffalo in the 1860's that they used to stop trains for days while they migrated across the railroad tracks. Now, I am unaware that that species was endangered at that time.

Mr. LYLES. But it became pretty well endangered before the end of the century.

Mr. DINGELL. Yes, it did. It was wiped out, as a matter of fact, as part of a deliberate Government policy. Do you find the buffalo to be of no economic value today?

Mr. LYLES. No, I do not. I would protect the buffalo.

Mr. DINGELL. You would?

Mr. LYLES. But I would limit the area that the animal is permitted in.

Mr. DINGELL. Where is that statement inconsistent with the provisions of the Endangered Species Act? Where is that action inconsistent?

Mr. LYLES. Well, we are having a great deal of trouble, sir, putting a highway across the Pascagoula River in Mississippi.

Mr. DINGELL. All you have got to do is buy a little land for those cranes. That is what came out of this hearing; all you have to do is buy a little land for those cranes.

Mr. LYLES. Well, I do not know that the people in Jackson County, sir, are able to buy 3,000 acres of land.

Mr. DINGELL. Well, am I incorrect in my thesis or not?

Mr. LYLES. Well, my point made in there was—

Mr. DINGELL. Well, now wait. Answer my question. You make your points and I will ask my questions, and you will answer my questions. Now, am I right or wrong?

Mr. LYLES. Well, I think you are wrong.

Mr. DINGELL. All right. Now, all we have got to do is buy a little land for those cranes, or relocate the highway into a different area, is that not right? Is there any other prohibition in the law here?

Mr. LYLES. How about the cranes moving?

Mr. DINGELL. Can you move the cranes?

Mr. LYLES. Well, I will tell you this: I live fairly close to the area, sir, and some of the property that I own, these cranes used 45 years ago. They no longer use the area; they have moved.

Mr. DINGELL. But you can buy other land for the cranes or move the highway into a different place.

Mr. LYLES. I have no objection to buying land for them.

Mr. DINGELL. Just a minute. You either move the highway or you buy a little bit of land for the cranes, and you have solved the problem, have you not, yes or no?

Mr. LYLES. You could solve the problem that way if you can buy enough land.

Mr. DINGELL. What, then, is your complaint?

Mr. LYLES. Well, my complaint, sir, was just exactly what I said in the speech, and that is that you have held up a highway for 5 years while we killed approximately 26 to 30 people a year, on an average, in order to protect 40 sandhill cranes.

Mr. DINGELL. I do not applaud the death of 26 people a year. I do not applaud administrative behavior which does not resolve the problem in a more timely fashion. What I do find difficult to accept is that folks in the highway department are incapable of appreciating that there is a fairly simple solution to this problem, and that you come here, full of ignorance, to tell us about what the solution happens to be, when, in fact, it is already in the testimony that has appeared before this subcommittee.

Mr. LYLES. I did not offer any solution; I just said it was a problem.

Mr. DINGELL. I see. You have set forth in your comments a number of complaints about the findings that the Secretary has to make with regard to present or threatened destruction or modification and curtailment of its habitat or range. Do you challenge that that is a criteria for endangerment of a species?

Mr. LYLES. I think that would be a criteria.

Mr. DINGELL. Do you differ with it?

Mr. LYLES. I can show you instances, for instance, in the marshes, where more changes are made in the short space of 8 hours by a hurricane than man is going to make in the next 25 years.

Mr. DINGELL. Yes, but do you differ with that criterion? I am aware with what hurricanes do to marshes. Do you challenge or quarrel with that criteria?

Mr. LYLES. In some instances, yes, I would quarrel with it.

Mr. DINGELL. All right. do you quarrel with it in all instances?

Mr. LYLES. Not in all instances.

Mr. DINGELL. Is it a valid criterion?

Mr. LYLES. Not in all instances.

Mr. DINGELL. Is it invalid in all instances?

Mr. LYLES. No, it is not invalid in all instances. There are instances where it is valid.

Mr. DINGELL. Do you quarrel with item 2 which you set forth section 4(a), which specifies overutilization for commercial, sporting, scientific, or educational purposes? Do you quarrel with that?

Mr. LYLES. I cannot think of an instance where we have exterminated a species from commercial or scientific work, and I have been in the field for about 45 years.

Mr. DINGELL. How about the hawk; how about the passenger pigeon?

Mr. LYLES. The hawk was not to my knowledge an object of commerce. The passenger pigeon—I have read a great deal about it. I am not at all certain that overexploitation did it.

Mr. DINGELL. Do you deny that it was overexploitation?

Mr. LYLES. Yes, but I do not know about the others; I simply cannot say. But, the passenger pigeon, I have read considerably about.

Mr. DINGELL. Do you deny that it was overexploitation that did it?

Mr. LYLES. I have strong misgivings that it was overexploitation, yes, sir.

Mr. DINGELL. Now, you say that item 3 states that an animal may be threatened by disease or predation. Do you challenge that as a criterion?

Mr. LYLES. Well, yes, I do.

Mr. DINGELL. You do? On what basis?

Mr. LYLES. Predation, sir, is a natural thing.

Mr. DINGELL. Do you challenge this as a criterion for defining an animal as endangered?

Mr. LYLES. If the——

Mr. DINGELL. Do you challenge this as a criterion for finding that the animal is endangered?

Mr. LYLES. Yes.

Mr. DINGELL. So, if there is disease or predation and the animal is wiped from the face of the earth, that is not a criterion?

Mr. LYLES. It has been going on for a long time, sir.

Mr. DINGELL. But is that a criterion for the wiping of an animal from the face of the Earth or not? You do not care about it?

Mr. LYLES. Well, it is natural selection, sir.

Mr. DINGELL. Well, how about the eastern elm; does that bother you, or are you unconcerned?

Mr. LYLES. I am just vaguely familiar with the eastern elm. I know about the chestnut. I know about what happened to them, but I have no specific knowledge, sir.

Mr. DINGELL. Supposing we were to take the chinchona tree; would that trouble you at all?

Mr. LYLES. The what?

Mr. DINGELL. The chinchona tree; supposing we were to just say the chinchona tree was being wiped out by disease and insect predation. What would you say about that?

Mr. LYLES. I would say, sir, that we should do everything we could to protect it.

Mr. DINGELL. Why would you make the distinction between the chinchona tree and the sandhill crane?

Mr. LYLES. Simply because there have been some lives involved, sir.

Mr. DINGELL. I see. And there are no lives involved in the preservation of the chinchona tree?

Mr. LYLES. Not that I know of.

Mr. DINGELL. Why do you make the distinction?

Mr. LYLES. Again, we get back, sir, to the value of human life and the importance that these animals——

Mr. DINGELL. Are you telling us that the only way that the pressure on this one highway could have been absolved is by constructing the other highway in precisely the place it was planned, or is there another place that it could have been put?

Mr. LYLES. When the suit was brought, the highway was completed up to that particular point. It had already been completed all across Louisiana, all across Mississippi, and all across Alabama. It was up to that point when the suit was brought.

Mr. DINGELL. Under the statute, if consultations had occurred earlier, they might have obviated that situation, might they not?

Mr. LYLES. I do not know.

Mr. DINGELL. Well, you are an expert on this, and you are appearing here to testify in great depth and wisdom on this. I just assumed you would probably know that fact.

Mr. LYLES. I do not know whether the highway department conferred with the Interior Department, but I do know that the highway has been held up. That is exactly the statement that I made.

Mr. DINGELL. But you do not know why it was held up. You do not know whether it was road builders, or Interior, or it was the Bureau of Sport Fisheries and Wildlife, or whether it was the State agency who constructed the highway, or who was at fault. All you know is that the highway was held up, is that right?

Mr. LYLES. It would seem to me that if they were going to hold it up, they should have held it up before it got to the crane area.

Mr. DINGELL. You really do not know who it was that held it up, or why, do you?

Mr. LYLES. Well, Public Law 93-205 held it up.

Mr. DINGELL. Now, on what basis do you make that statement?

Mr. LYLES. Simply because it went through two court suits.

Mr. DINGELL. You do not know whether that road could have been built 200 yards off to one side or the other? Do you know that?

Mr. LYLES. I am not an engineer, and I have not consulted the plans.

Mr. DINGELL. So, then, you really do not know, do you?

Mr. LYLES. No, I do not.

Mr. DINGELL. Thank you. Thank you, Mr. Chairman.

Mr. LEGGETT. Thank you very much, Mr. Dingell.

I suspect that you are motivated in part by coming here, Mr. Lyles, because you live near the intersection to which we have referred?

Mr. LYLES. No. I came here because I am concerned about our fishing operations in the gulf.

Mr. LEGGETT. And as I understand it, there was an effort to set aside some 200,000 acres for the sandhill crane, and now that has been modified down to something like 17,000 acres to protect the cranes. Are they going to build the highway with the 17,000 acres set-aside?

Mr. LYLES. I believe that Congressman Lott told me a couple of weeks ago that they were still not certain that they were going to get the highway.

Mr. LEGGETT. I know Mr. Lott testified on that and he was very much concerned. Of course, that does raise a question. Apparently, in that case, even under the existing law, there was some wane that took place. Now, it may well be that for 40 cranes you would like to set aside 40 acres, and some people would like to set aside 400,000 acres.

It appears that the compromise that they came up with was some 17,000 acres.

Mr. LYLES. There is one misimpression there. I was really concerned very little with the cranes. I just inserted that item in the concern of the fishing industry in the southeast, in general, is a very deep concern, because we recognize that in trawling, you are always in an area where there are some species for which are not plentiful and can be endangered. We just want some protection.

Now, I could cite—I choose not to get into the figures, but there are a couple of small species along the Gulf of Mexico—I say small in number—that reside in an area where trawling goes on at the present time. I suspect if these were properly identified, they might be classified as endangered species, simply because there are not many of them there and any action can endanger them. In 40 years, it is still the same thing; you just see one now and then.

Now, if these animals were placed on the endangered species list and the area were classified as an area of substantial feeding or breeding of these animals, our entire trawling operation would be in trouble, and that is our concern.

Mr. DINGELL. Mr. Chairman, could I be recognized again?

Mr. LEGGETT. Yes.

Mr. DINGELL. Can you inform me if you are aware of the difference between a rare species and an endangered species?

Mr. LYLES. I have not been able to clarify that in my mind, Mr. Dingell.

Mr. DINGELL. A rare species is one which is found infrequently throughout its range. An endangered species is one which has been forced by the pressures enumerated in the statute to the point where it may shortly vanish from the earth.

Mr. LYLES. How do you define these two in terms of science?

Mr. DINGELL. I have just done so. Are you aware of difference, is what I am asking you.

Mr. LYLES. I have not been able to do that.

Mr. DINGELL. Rare species have been around a long time, and they have persisted in this state of rarity for a goodly period. Endangered species are those which, because of biological and other pressures, are in danger of disappearing from the earth. This is a question which biologists not infrequently address.

Mr. LYLES. Are you sure that you always have enough biological data to indicate the difference? Therein lies the question in my mind.

Mr. DINGELL. You are now considering a very good question. You said that with competent biologists you could prove something with regard to this question.

Mr. LYLES. Yes, sir.

Mr. DINGELL. It struck me that you were really telling me that this is a paradise for knaves and charlatans, and I do not find it so.

Mr. LYLES. You could do that if you had the financial backing, sir.

Mr. DINGELL. Well, I disagree with you, because my view is that competent and honorable men testifying in a proceeding are going to be fairly heard, and the judgment will be made on the basis of a fair review of the record, which is the way these matters are done.

Now, can you name me one species which is going to be in danger from trawling in the gulf area?

Mr. LYLES. We are fighting the turtle battle now, sir.

Mr. DINGELL. What turtle battle?

Mr. LYLES. The sea turtle.

Mr. DINGELL. Which sea turtle?

Mr. LYLES. Well, the Atlantic Ridley.

Mr. DINGELL. Are you trawling for sea turtles?

Mr. LYLES. No.

Mr. DINGELL. Do you pick them up in trawls?

Mr. LYLES. Occasionally, yes, sir.

Mr. DINGELL. And when you pick them up in a trawl, you pull them out of the trawl and drop them over the side, right?

Mr. LYLES. Well, now, Mr. Dingell—

Mr. DINGELL. Is that not the way it is done?

Mr. LYLES. Now, wait just a minute. That is the theory, but in the pragmatic world, you have a fisherman out there trawling in the heat. He has a catch of shrimp on deck and he is sorting the shrimp from the other animals, trying to get his money catch aboard, and he does not always take—

Mr. DINGELL. You are not telling me he cannot tell the difference between a sea turtle and a shrimp, are you?

Mr. LYLES. No. If you will just give me time, I will tell you, sir. What he does is he does not take time to take care of that turtle right away, and this is the area that there is some danger in.

Mr. DINGELL. How big is a sea turtle?

Mr. LYLES. It depends on his age.

Mr. LEGGETT. What is the range?

Mr. LYLES. Well, I would say that the average Atlantic Ridley—

Mr. LEGGETT. A foot and a half, or something like that?

Mr. DINGELL. Are you indicating it is 18 inches across?

Mr. LYLES. A good 18 inches.

Mr. DINGELL. How big is a shrimp?

Mr. LYLES. Well, it depends on the size; you have got them from a 150 count, down to under 15.

Mr. DINGELL. So, you are talking about a 2- to 6-inch animal, right?

Mr. LYLES. Right.

Mr. DINGELL. There is a visible difference.

Mr. LYLES. Yes, I said he was trying to get his money crop in the Hold and there are thousands of animal in the catch.

Mr. DINGELL. How are you going to tell me that a shrimp fisherman is not going to know he has a sea turtle in that trawl?

Mr. LYLES. He does not know it until he brings it on board.

Mr. DINGELL. But the minute he brings it on board, he makes the necessary correction, does he not?

Mr. LYLES. That is what I said, Mr. Dingell. I said that he does not always take time to take care of that turtle first; he takes care of his money crop first.

Mr. DINGELL. All the law says is that he pitches the sea turtle over the side, and he does so with reasonable dispatch. Is that a burden?

Mr. LYLES. I think you will find, though, that the area——

Mr. DINGELL. Is that a burden?

Mr. LYLES. No; it is not burden, but I think you will find——

Mr. DINGELL. Well, if it is a burden, I would appreciate it if you would tell me.

Mr. LYLES. Well, that is not the way it is.

Mr. DINGELL. So, we have settled it, that all he does is toss the sea turtle over the side and goes back about his shrimp.

Mr. LYLES. No; we have not settled that, Mr. Dingell, because if you close his trawling area and if you close areas to trawling because of substantial feeding and breeding, then he has problems because he has to go elsewhere.

Mr. DINGELL. The gulf is not a feeding and breeding area.

Mr. LYLES. No, but there are certain lucrative areas.

Mr. DINGELL. These turtles tend to be, if I know anything about them, rather fussy about their feeding and breeding areas, are they not? They tend to be rather rare elsewhere?

Mr. LYLES. Well, they are picked up in a lot of places in the gulf, Mr. Dingell.

Mr. DINGELL. You are not going to close the whole gulf for the sea turtles, are you?

Mr. LYLES. I do not know; that is what I do not know. I cannot tell you.

Mr. DINGELL. Well, I will tell you this: If some blockhead tried that, we would change the statute and the courts would kick him in the pants, like that [indicating].

Mr. LYLES. I appreciate your consideration for us, sir.

Mr. LEGGETT. Mr. Oberstar?

Mr. OBERSTAR. Thank you, Mr. Chairman. I believe the examples cited in Mr. Lyle's testimony do point up some of the very critical issues in the endangered species controversy. One is on page 3, where the statement is made that Public Law 93-205 creates a situation where the United States is attempting to overrule the process of nature.

I believe that is a fallacy commonly associated with the act. The act is attempting to prevent a situation where man interrupts the process of nature and adversely impacts creatures that nature has put on this Earth.

On pages 6 and 7, the reference to the sand hill cranes, is, again, a very pertinent example of what this act is intended to do, and

how it sometimes is not carried out properly. To say that we are sacrificing human lives for some sandhill cranes is to contrast valid comparisons with incorrect value judgments.

Had the act been properly carried out and the consultation taken place before the issue was joined, and had litigation efforts been entered into seriously and land acquired, as the act provides, there would not have been this confrontation between development and preservation of a species.

Are you aware of any intentions of various groups to use the Endangered Species Act for the purpose of preventing the construction of this highway and bridge which they could not stop in any other fashion?

Mr. LYLES. Mr. Oberstar, I do not know of anyone who has knowledge of the area and the congested conditions of the area—that is, you know, a resident within the area that would want to stop the highway, because it is a very serious matter. The answer is no, I cannot think of anyone that would use that as an excuse to prevent the highway.

Actually, it is across a marshland. Admittedly, there will be changes in animal populations all the way across that causeway. There is no way that you can do that without changing the environment enough to create, in some instances, a new animal population.

But I do not think that I know of anyone that would use that as an excuse just to prevent that bridge from going through. It may be; I do not know of any.

Mr. OBERSTAR. In your judgment then, the act was not improperly used in that situation?

Mr. LYLES. I would hate to accuse anyone of that, sir.

Mr. OBERSTAR. Would it have been possible then, had there been proper planning and proper implementation of the act well ahead of time, to avoid a confrontation?

Mr. LYLES. I think that is the thing that is really bothering me here, is the case where the published plans of that highway were known for many, many years before it actually went through, and yet it was completed right up to the line before the suit was filed. Something should have been done before it got to that stage.

Mr. OBERSTAR. That is exactly the point. There is a wide range of Federal and State agencies involved in the construction process. If their job had been done properly, the conflict could have been avoided. That is what this act is all about.

Mr. FORSYTHE. Will the gentleman yield?

Mr. OBERSTAR. Yes, I would be glad to yield.

Mr. FORSYTHE. I think this is basic. As I understand it, in this instance we had a highway program started long before the act was even there, let alone the suit. It was true that some agencies still did not believe that the act applied to them. The endangered species process caught this highway after it was at a critical point, and only then.

Mr. OBERSTAR. That is the kind of information I was searching for. I believe it is a matter of educating the various Federal agencies. I am sure the gentleman would agree with me that some of our own Federal agencies are not in sympathy with the purposes of

this act, and by failing to implement it, cause problems for that very act.

No further questions, Mr. Chairman.

Mr. LEGGETT. Mr. Lyles, your testimony has been very helpful, and the examples you have cited have helped to peak our interest in this subject area.

Mr. Thornton has a question.

Mr. THORNTON. Mr. Lyles, on page 11 of your testimony, you suggested the creation of a board that would establish a cost-benefit ratio for placing an animal or a plant on the endangered species list. Do you have any standards to suggest exactly how you would calculate the benefit of listing an endangered species?

Mr. LYLES. I do not have them with me. I can get them for you if you would like for me to submit them.

[The following was submitted:]

GULF STATES MARINE FISHERIES COMMISSION,
Ocean Springs, Miss., June 16, 1978.

HON. ROBERT L. LEGGETT,

Chairman, Subcommittee on Fisheries and Wildlife Conservation and the Environment, House Committee on Merchant Marine and Fisheries, U.S. House of Representatives, Washington, D.C.

DEAR BOB: This letter has reference to my comments before your Committee on June 1, concerning oversight hearings on P.L. 93-205, the Endangered Species Act. I refer specifically to the question the Attorney raised who sat to your left. He raised the question of how one would construct a model for determining a cost benefit ratio for endangered species. The question raised the possibility of some lengthy discussions and I thought it best to consult with an economist before answering it.

It is extremely difficult if not impossible to quantify mathematically such terms as optimum yield in fisheries or esthetic values of saving a species. It is also very difficult to place a value on human life. To say that we would never take human life is unthinkable, for wars must be fought for the preservation of nations, cultures or societies and certain incorrigible criminals must be put to death because society cannot bear the many and diversified costs. Thus it follows that we have placed a price on human life. If we have placed this price on human life than it follows that other animal and plant life must also have a price and we must determine which has the higher price.

In developing a model that can serve as a guide in making such decisions we must first look at the cost of saving the animal. These costs include such administrative costs as enforcement, land or water areas which become unproductive as a result of these actions, and the actual cash outlay of purchasing the land to be set aside as unproductive. Society as a whole must then pick up the tab for the cost of unemployment resulting from this action, as well as the unemployed farmer or fisherman who has been disenfranchised by the action of placing an animal on the endangered list. There will also be the cost of a higher product—animal or legume, which the consumer must pay. There is no way of escaping these costs.

The benefits that accrue from saving the animal are somewhat more difficult to quantify. Certainly one of the most important considerations would be the value of the animal to the total biomass. While this might be costly to identify it could, in a rather general way, be determined. The value of the animal to man and his environment is another factor that must be considered. Finally there is the benefit gained by being able to observe the animal in his natural habitat. Economic gain to the area from tourism resulting from saving a species of this kind would be considered a benefit.

Fixing cost data and the value data in a model of this type would require the services of a professional economist. I am not an economist though I have discussed this matter with several professional economists.

Finally, it must be admitted that in an economy such as we live in, when we do something so that one group gains and another loses, we will in some fashion or by some method compensate the loser group. We may not do it in statutory form, but society will pay—there is no escaping it. When enough people begin to pay heavily the statute will be changed. What we should try to do is minimize the human suffering before we reach the crucial stage which sometimes brings very radical changes.

Very truly yours,

CHARLES H. LYLES,
Executive Director.

Mr. THORNTON. Do you have standards suggesting how those benefits could be calculated? Is that your testimony?

Mr. LEGGETT. No; he does not.

Mr. LYLES. Each one would be different. What I would have to do is get an economic model for cost-benefit ratios.

Mr. LEGGETT. What he is suggesting, Counsel, is that when you list something—you know, when you are destroying the Empire State Building, you give a side glance to the building that is being demolished, and you make your determination.

Mr. LYLES. Let me give you an example. If you find a plant, for example, on a man's farm that is an endangered species, and he has got enough acreage to graze 500 cattle, are you going to weigh the value of that plant, for instance, against the production of feed to determine whether or not the plant is worth saving?

Mr. THORNTON. How do you weigh the economic value of a species?

Mr. LYLES. That is an economic area, and I would prefer—

Mr. THORNTON. How would you calculate the economic value of the bald eagle, for example?

Mr. LYLES. Well, it is an esthetic value.

Mr. THORNTON. Can you ascribe an economic value to esthetics?

Mr. LYLES. Not easily.

Mr. THORNTON. But you are suggesting it can be done?

Mr. LEGGETT. I think he is suggesting that you can balance it. As an example, if you find a rare species of weeds going through the peanut belt in Georgia, theoretically under the law, you would have to abate all peanut support programs in that area, without weighing the benefits of the peanuts vis-a-vis the weeds. The weeds are not hurting anybody.

Mr. THORNTON. He suggested that there is a means of balancing on an economic basis the value of a species and the value of particular project or activity, and I guess I am suggesting that I do not think that can be done, because I think the economic value of many species is very hard to determine.

Mr. LYLES. Let me give you an example of the problems involved there and, of course, they are not insurmountable. We are dealing at the present time with a term the Congress calls optimum yield. It is very difficult to arrive at a term that will describe something that is optimum.

I can describe quantitatively a maximum sustainable yield. I cannot describe an optimum yield. There are no mathematical terms at the present time that will permit you quantitatively to describe an optimum yield. Yet, you have got to fix it.

Now, the same thing is true with plants of this kind. You have to optimize these things in some way. Each one, I think, would require a little different approach.

Mr. LEGGETT. What he is saying is that in the gulf, if it was determined that there was an endangered amphibious animal, whether it be the sea turtle or whatever, it is possible to interpret this act such that all fishing in the gulf would be abated to protect the particular item.

The corollary of that is that the judge interpreted that the construction of the dam which was 90 percent completed should be stopped even though it was an expensive thing, because the dam might affect some of the habitat of a particular endangered species.

So, unless all of the consequences are examined and some commonsense is exercised, as referred to by colleague Dingell, then some rather bizarre thing can occur. When we get into the situation of literal translation of the law, many times the results are totally unintended.

What is bizarre and what is not, many time, is in the eyes of the beholder. What is commonsense to me may not be commonsense to the witness.

So, the question is, do we have any leeway whatsoever in these acts, and I think it bothers many of us that section 7 of the act to which we are referring has apparently provided for no leeway, as currently interpreted by the lower courts.

Mr. Bedell?

Mr. BEDELL. Thank you, Mr. Chairman. On page 8 of your testimony, Mr. Lyles, you mentioned that you could assure us that with half a dozen good biologists, you could close down 90 percent of the construction in the country. We had similar testimony the last time this committee met pertaining to the Southeastern United States, in particular. Reference was made to a taxonomic technique called splitting, where one could, in essence, probably come up with what could be biologically defined as a new species or subspecies, sort of ad nauseum, whereas to the normal human eye, no one could tell the difference.

We had one example given of a creature that was shown to us where the only difference between two species appeared to be a spot on the tail of one of them, which only appeared as an artifact of preserving the animal; in other words, it only appeared after it was dead.

Is there any other way that we could go about classifying animals that should be protected, other than by species, to prevent such possible proliferation of species that could be created, so to speak, to fit the needs of lawsuits or to stop projects?

Mr. LYLES. In this world of change that we live in, as I said, animals get split off for many reasons and they develop different strains, and ultimately become different species.

When I was in school, and that has been a long time ago, we described these as physiological strains. Now they describe them as subspecies. I suppose in the final analysis, you do have so-called subspecies or physiological strains. But, actually, these animals are on the move, one way or the other. We do not know which direction they are going, and let me describe that.

In my study of shrimp over the past half century, I have become convinced that the white shrimp is moving either from fresh water to salt, or salt to fresh, and that the long-range trend of this animal is to move into one or the other areas. Sometimes I think he is moving to saltwater, and then again I think that the evidence is pointing toward movement into fresh water.

Animals do this, and as they move they get locked in certain places, and different strains and, ultimately, different species develop because of changed environmental conditions. The question that comes to my mind is, can we possibly protect all of these animals? There are going to be changes.

Whether we like the law of survival of the fittest or not, it is with us, and natural selection is going to take place. We could go on changing the environment to fit these animals and make them survive, or limit the amount of time. But, even man's time on this planet is limited because of changes that will occur.

So, the question in my mind is, let us try to determine the relative importance of the animal in the biomass, and what is really happening to it, before we take any drastic action that affects the lives and welfare of a lot of people.

Mr. BEDELL. Well, it would seem that one problem, though, speaking from a legislative, legal drafting point of view is that we have the word "species" which controls what is to be listed. If, in fact, a species can be something which is indistinguishable from another in the environment, perhaps we need a redefinition of the term for the purposes of this act.

People are citing this as an example of a problem that could come about because of the act. You could, in other words, have projects stopped because of the creation of a new species that is not really functionally any different from other animals that can be found in some abundance.

I am trying to find out whether that is a real problem, and if it is, is there some other way that we can define things, legally, other than this apparently flexible biological concept of species.

Mr. LYLES. Not that I know of. Taxonomy is a science; you have to have a way of describing the animals, as you do mathematics. I know of no other way of doing it.

Mr. BEDELL. But it is a generally accepted principle, then, that if you have a scale count that is different by one scale on an animal, that you could then get it called a subspecies?

Mr. LYLES. Unfortunately, that is the way it is done.

Mr. BEDELL. Thank you, Mr. Chairman.

Mr. LEGGETT. You have been a very patient and helpful witness, Mr. Lyles, and I thank you very much.

Mr. LYLES. Mr. Leggett, could I say just a few words, sir?

Mr. LEGGETT. Certainly.

Mr. LYLES. On behalf of the industry in the gulf, we would like to thank you for the way you have handled the chairmanship of the subcommittee since you have been here. I have heard it mentioned to me numerous times; you have always had an ear for us. You might not always agree with us.

Mr. LEGGETT. I am not sure I have always helped you out. The Mexican Treaty situations have presented some real threats to the shrimp fishermen of which we are very cognizant, and we are

doing some studies right now to find out exactly what the economic ramifications of that are.

Mr. LYLES. Sometimes, sir, we are beyond help but we want to say we thank you, sir, for the way you have handled a committee that so vitally affects our lives.

Mr. LEGGETT. Thank you very much.

Mr. LYLES. Thank you.

Mr. LEGGETT. Next, we have got a panel comprised of: Mike Berger of the National Wildlife Federation; Tom Garrett from the Defenders of Wildlife; Dr. Tom Lovejoy, program director for the World Wildlife Fund; Dr. Mike Zagata of the Audubon Society; Professor Zygmunt Plater for Tennessee groups and Friends of the Earth; and Christine Stevens, secretary of the Society for Animal Protective Legislation.

Professor Plater, I understand you have to get an airplane and you want to go first. Let me get everyone identified up here. First, left to right, will be Mr. Plater, Mr. Berger, and then Dr. Zagata. How about Mr. Lovejoy; is he here?

Mr. PLATER. Dr. Lovejoy had to leave, Mr. Leggett. He left his statement with me.

Mr. LEGGETT. His statement will be included in the record. Tom Garrett and Christine are there.

It is very nice to have you here, Mr. Plater. Your statement will appear in the record, and you can read or summarize it, if you wish.

[The statement follows:]

STATEMENT OF ZYGMUNT J. B. PLATER

I am Zygmunt Plater, Professor of Law at the Wayne Law School in Michigan, and I have been associated with the Tellico endangered species litigation from its commencement. I represent the Association of Southeastern Biologists, conservationists and the Little Tennessee River Alliance in that case.

The Tellico case undoubtedly bears the primary responsibility for triggering the chorus of fears that surrounds the Act. (Few reporters have noted the effective application of the Act in its *only* other court enforcement, the Mississippi sandhill crane case, *National Wildlife Federation v. Coleman*.)

The Tellico case has been reduced to a simple extreme: "a small fish has blocked a huge \$120 million hydroelectric dam at the last moment, demonstrating that the Act is inflexible and stops Progress."

Since the Tellico case has become such a frequent example of how the law works, it is critically important that this Committee (and Congress in general, which will be making important decisions on the Act) understand that case in detail, so as to be able to question and assess whether it is a success or a failure of our legal system, whether it shows a problem with the agency or with the Act, and whether it truly is a typical example of hordes of other cases which are allegedly occurring or about to occur.

It is for this reason that this Committee is to be congratulated for insisting in a full factfinding review of this particular project-species conflict—the first ever to occur in regard to the Tellico project.

There is not sufficient time today, of course, to present the Tellico case study, but I would like to summarize the facts already on the official record, to provide a basis for the discussions that will follow in these hearings.

In the most fundamental terms, the simple extremist summary of the Tellico case is simply incorrect.

I would like to relate the facts of the Tellico case to the concerns expressed by critics of the Act:

1. The Act has not operated as an absolute prohibition of the project. The endangered species issue does not conflict with the whole \$120 million dollar Tellico economic development project, but only with the reservoir impoundment, a small

fraction of the project which even today represents only around \$20 million, a large chunk of which is labor.

2. Tellico has never been an irreconcilable conflict: profitable public interest project modifications have existed ever since the threat to the species was discovered.

3. The snail darter is not beside the point, merely a vehicle to review the project: the federal reservoir impoundment would clearly extinguish 100% of the species' natural population, which is precisely what the Act was intended to prevent.

The species is highly sensitive and inextricably linked to the river habitat qualities that led citizens to oppose this last dam, long before we knew of the fish's existence. The Act in the Tellico case demonstrates a direct scientific, utilitarian and human purpose. As the attached map indicates, the fish acts as a legal indicator of human values: its range apparently extended throughout the eastern river system, but it cannot live in the lowered quality habitat of an impoundment, and one by one, as the 68 dams on Tennessee's river system were built, the fish were exterminated. Now its last habitat is also the last undammed stretch of such high quality river left in Tennessee and the region.

4. The statutory violation did not arise at the last moment. TVA learned of the existence of the species in its project area back in 1973 when only a concrete spillway was under construction.

5. The most evident inflexibility in all the Tellico chronology has been the agency's reluctance even to discuss the project alternatives that were different from its original dam.

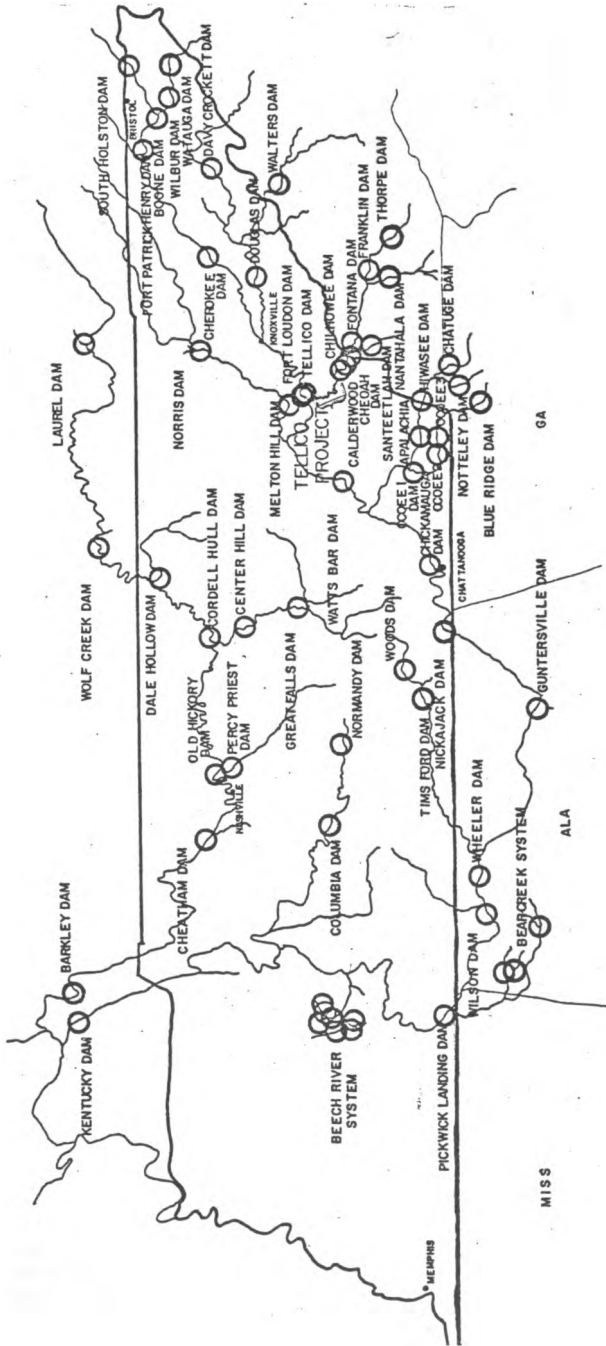
Surprisingly, and fortunately, the great value of the now federally owned valley makes successful consultation still possible. It does not serve our present purposes to go deeply into the marginal economic nature of the reservoir impoundment; it is sufficient to say that the GAO has severely criticized the project's claimed benefit statistics, and as the last on the list of possible dams to be built, Tellico was never a good economic bet.

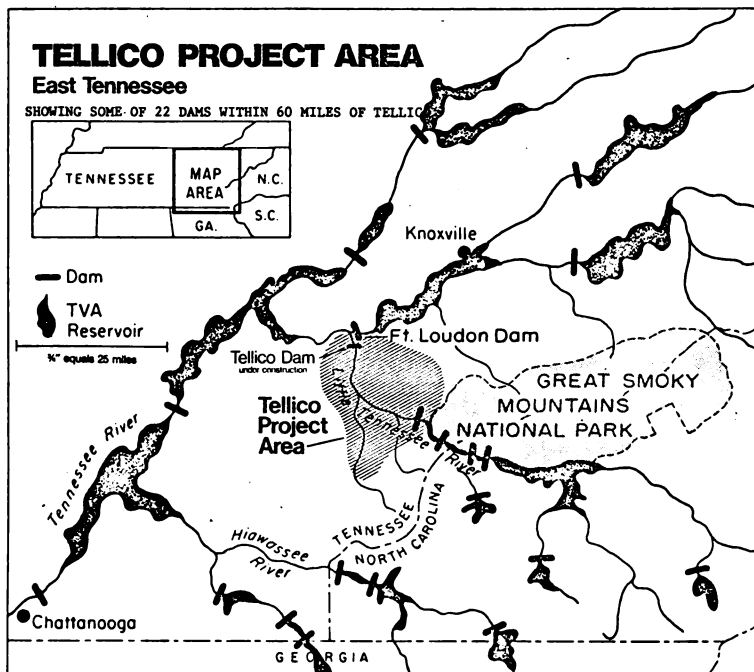
The reason that economic project alternatives to the dam exist is that Tellico is not primarily a hydro project. It was justified by two primary benefits: the creation of subsidized industrial lots, and flat water recreation. The traditional hydro purposes of dams—electricity, navigation, flood control—on TVA's own figures were incidental and could not justify building the reservoir. The dam has no generators, and could produce only about 23 megawatts by channeling water through a small canal to a nearby dam. Barge use is minimal and diminishing in the area; floods are already controlled by the regulated network of more than 60 dams.

Since the reservoir impoundments is such a small part of the \$120 million project cost, the valley's valuable resources that would be destroyed by impoundment are the key to possible administrative reconciliation. Tennessee's two major industries are agriculture and tourism: the valley contains 25,500 acres of prime class farmland, and a dozen major Cherokee historical sites including forts, the birthplace of Chief Sequoyah, and Tennessee-Chota, the birthplace and religious capital of the Cherokee nation, all adjoining the Great Smokies National Park. In addition, more industrial land will be available without the reservoir, and the state's finest prime trout fishing water will be conserved for recreational use.

As you can see, the Tellico case is far more constructive than its press, and in light of the promising interagency consultations now going on in Tennessee, Tellico can ultimately become the difficult case that proves the utility and wisdom of the Act, and the high human value of conserving each species of our endangered wildlife heritage.

TENNESSEE RIVER SYSTEM





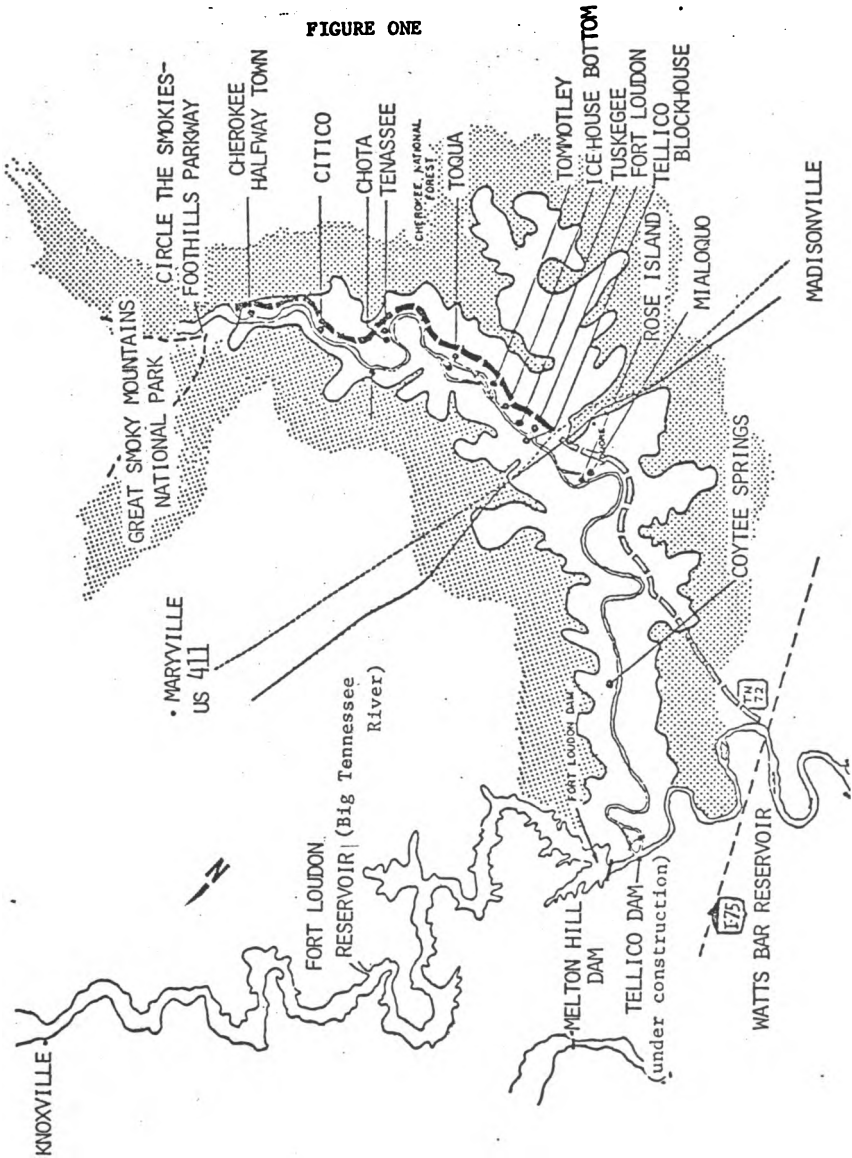


FIGURE ONE
Tellico Project Area on the Little Tennessee River
Showing major Cherokee historic sites and a
Cherokee trail tourist route
existing route 72

**STATEMENT OF A PANEL CONSISTING OF THE FOLLOWING:
 ZYGMUNT J. B. PLATER, LITTLE TENNESSEE RIVER ALLIANCE AND FRIENDS OF THE EARTH; MICHAEL E. BERGER, ASSISTANT CONSERVATION DIRECTOR, NATIONAL WILDLIFE FEDERATION; TOM GARRETT, LEGISLATIVE AFFAIRS SPECIALIST, DEFENDERS OF WILDLIFE; MICHAEL D. ZAGATA, FEDERAL RELATIONS, AUDUBON SOCIETY; AND CHRISTINE STEVENS, SECRETARY, SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION**

Mr. PLATER. Thank you, Mr. Leggett. I am Zygmunt Plater, professor of law at the Wayne Law School. I was previously on the faculty of the University of Tennessee Law School, and I have been associated since 1974 with the Tellico Dam litigation which some of you may have heard about in the past year. I represent here the Association of Southeastern Biologists, conservationists, and the Little Tennessee River Alliance.

I think it is fair to say that the Tellico Dam snail darter case bears a lot of responsibility for bringing the act into the danger it currently is facing in Congress, and that is why it is absolutely imperative that this committee know the facts of the *Tellico* case, because it has become the case study upon which the chorus of critical allegations—what you, Mr. Chairman, have referred to as the “burlesque” treatment of the endangered species issue—has been based.

This is not the time, of course, to go through a full review of the *Tellico Dam* case. That will happen later on, but at this stage I would like to summarize some of the facts on the official record which are important to your consideration, because you have been hearing so much of the burlesque.

Essentially, the *Tellico* case has been reduced in the media to a very simple extreme—a small fish has blocked, at the very last minute, a huge, \$120 million hydroelectric dam, which demonstrates, it is said, that the act is inflexible and is going to stop progress across the face of the Nation.

Mr. LEGGETT. Let me ask you this: Have you participated in the Supreme Court litigation?

Dr. PLATER. Yes, Mr. Chairman. I litigated the case before the Supreme Court.

We are awaiting a decision in that case, and I think it is significant that large portions of the briefs filed in that case were concerned with the background facts on this project. You cannot dismiss it just as “little fish versus big dam,” which, of course, is the first thing that we all heard about.

That caricature is a danger, and it is a danger that I would like to confront through the terms of the *Tellico* case. You have heard, for instance, that this case came just at the last moment. Mr. Leggett asked the question last week whether TVA ever had notice of its statutory liability before the dam was substantially complete. I would like to note, attached to my testimony, TVA's own exhibit No. 8 from the Senate hearings held last summer, which indicates that in 1973, when TVA first heard about the snail darter, neither the dam nor the project were far along, much less substantially complete.

If you look across at the entry for the main dam, spillway, auxiliary dams expenditure, you will find that in 1973 when TVA first learned of the species, there was only \$4,030,000 spent on the dam structure; that is to say, the vast majority of project expenditure to that time was to buy the fertile farmland, the river valley, and to build needed roads for the valley system.

It also is important to note that as early as 1972, TVA had notice—and it is in the court record of the NEPA case—that there were, in all likelihood, endangered species right within the Tellico project area.

And they certainly had notice, Mr. Leggett, answering another question of yours last week, that the endangered species issue went to the heart of the dam. From the very beginning of TVA's contacts with the Department of Interior, they were saying, in effect, "You are not going to list this, so as to stop our dam, are you?"

The consequences were clear; the compliance was not. I would note that, therefore, that the figures that have been given to you by several congressional witnesses, and by the media, as well, are just plain inaccurate. Supposedly, there was 50 percent completion of the dam at the time the species was discovered—you see in black and white before you, in TVA's own figures, that that was not so. Further the dam was supposedly 75 percent complete when the species was finally listed in 1975—over TVA's repeated objections—that, too, on the figures in front of you is clearly not the case. Those allegations are based, only on a statement by the previous Chairman of TVA, and never have been based on statistics. Unfortunately, you have heard a lot of those supposed completion figures.

The act does not operate as an absolute prohibition on projects, either in the *Tellico* case or otherwise. As a matter of fact, the endangered species issue does not conflict with the \$120 million Tellico project. Tellico is an economic and land development project; the dam is only a minor portion of it. The endangered species issue conflicted only with the dam part of the proposal—the reservoir impoundment of this, the 68th and last of TVA's impoundments.

Tellico is not an example of an irreconcilable conflict. As a matter of fact, in all of those thousands of cases and hundreds of actual conflicts, it is clear, there never yet has been an irreconcilable conflict.

And in the *Tellico* case, ever since the species was discovered, there have been profitable project alternatives which were urged in good faith upon the agency. But TVA took the position from the very beginning that it would not comply with the law by considering project options (except transplantation efforts), instead asserting that it was exempt from the law for a variety of reasons.

Mr. LEGGETT. I am sorry to interrupt you. The species has been transplanted, and I think they have had three gestations.

Mr. PLATER. Right.

Mr. LEGGETT. What are your views as to the number of gestations required to prove that the species can be transplanted?

Mr. PLATER. That, of course, is a sensitive biological question. I would note that on the court record, all parties agreed that even if

it appeared to be successful initially, it would be from 5 to 15 years before you can be sure that a species is satisfactorily transplanted.

Mr. LEGGETT. Secretary Herbst said 3 years.

Mr. PLATER. I believe that he was counting from the present, and—if, indeed, there had been successful data 2 years ago—that might have started the 5 years running.

The point is, Mr. Leggett, though—and this is something, of course, you have never heard in specifics—the field data does not show that the transplant is a success; the only documentation that shows it is a success is the PR releases from the Tennessee Valley Authority. On the factual record, in 1975 TVA put 710 fish in the Hiwassee River, which is the only river in the region which is remotely close in habitat quality to the Little Tennessee, and since that time they have gone back periodically and assemble field data to find out how many are still there: The number of sightings has decreased each time, spring, summer, fall, winter, for two seasons. So, the field data indicates that the transplant was not successful. TVA then said, “We will not rely on field data, because that is probably inaccurate,” and turned to the multiplication table. Here, in the Senate hearings last summer, the question was asked of TVA, “How did you come up with this glowing statistic of success in the *Tellico* case,” and as noted in the hearings record, TVA subsequently replied that they had relied on arithmetical progressions. Starting in 1975, they had 710 fish; half of those were females, and they in effect assumed that the females replicated themselves six times over. You multiply and get 2,000 fish, and that is the “factual basis” of the success story. The actual data, of course, is an important part of this committee’s consideration, and I would hope that you would ask TVA for real data rather than the multiplication table.

It has often been alleged that the snail darter issue is merely a coincidental “handle” for opponents of the *Tellico* dam. I would like to note that the snail darter is not beside the point. It is not a violation of Congress purpose in passing the law that it was used here in litigation involving a controversial dam. No. 1, of course, the dam threatens to render the species completely extinct, and that was precisely the problem the Congress was seeking to deal with. Second, you cannot separate the snail darter from its habitat. It depends for its life on the qualities of this last remaining river, qualities that are important for human beings, as well; of course, many people were fighting for the valley long before they knew of the snail darter and its dependence on precisely those qualities.

Mr. LEGGETT. As I recall, we have talked on this before, have we not?

Mr. PLATER. Yes, we have, sir.

Mr. LEGGETT. You were working against this dam for other reasons prior to the snail darter situation.

Mr. PLATER. I was on the outskirts of the old NEPA litigation, but I was called in on this case by the local farmers in 1974, when they said, “There is still another opportunity to raise the issue of this very special river valley.”

As a matter of fact, Justice Powell asked me a question that was getting at exactly that point—whether this particular case was brought for reasons not intended by Congress. He said, “What

purpose in congressional terms does the snail darter really fulfill?" I said, of course, that you cannot eat it; it does not have any direct economic value. But this map here, which is attached to my submittal, shows the committee the real utilitarian value of the snail darter. There are 68 dams in the Tennessee River system; the first several generations of these dams were very important to build the economy of the region. But one by one by one, every piece of flowing water that could be dammed was dammed, so that, now, Tennessee is blessed with three times the shoreline of all the Great Lakes combined. There are 2,500 linear miles of rivers that have been dammed. As you can see, there is very little flowing water left.

Mr. LEGGETT. If you will please suspend your testimony at that point; you can let down the map. We will have to suspend to answer this rollcall, and then we will be back.

[Whereupon, a brief recess was taken.]

Mr. LEGGETT. The meeting will come back to order. You were showing us the map of the 68 impoundments in Tennessee with a perimeter area larger than the Great Lakes, which have snuffed out all of the snail darters.

Mr. PLATER. Well, that really is, apparently, biologically the case. According to TVA's own biologists, it appears that the snail darter at least used to live in this portion of the river system [indicating eastern half of river system]. One by one by one, these populations were rendered extinct, until, now, the species exists only in the last undammed portion.

And so, what we said to the Supreme Court, and have said repeatedly, is that in this case the endangered species acts as a biological indicator and a legal indicator, that this habitat, which is important for human purposes as well as for the fish's purposes, is threatened. The analogy drawn, I believe, in 1973, when you were passing the law, was that coal miners would take canaries down into the coal mines, because when a canary, a sensitive species, would be endangered by poisonous gas, that indicated a danger for human purposes, as well.

Mr. LEGGETT. Now, how do you draw the corollary with the snail darter?

Mr. PLATER. In this case, the fact that the snail darter lives there, and only there, is a vivid indicator that this is the last such place left in the region where human beings have the special qualities of this valley. It is the largest, richest, cool, clear flowing trout river left in this region.

The law, in other words, acts as an early warning system, and that is a very utilitarian purpose.

Mr. LEGGETT. Do you think that it is one of the intents of the law to act as an early warning of the need to preserve the environment not for the endangered species, but for people?

Mr. PLATER. There was testimony in 1973, Mr. Leggett, that talked about habitat loss as one of the major problems, and Federal projects as major causes of habitat loss. Senator Cranston, on the Senate side, said that by protecting endangered species, we are protecting them and their habitat for our own purposes, as well. That is to say, the thought of the canary in the coal mine, the utilitarian function of endangered species was there in Congress, as

well as the philosophical, scientific, and biological importance of wildlife conservation.

Mr. LEGGETT. Do you think that when he said that, though, he was intending that we are protecting the habitat for purposes of human enjoyment that we were protecting it for purposes of human appreciation of the last remaining species?

Mr. PLATER. I believe Senator Cranston talked about habitat, and, of course, the law talks about not only preserving species, but their habitat.

I do not believe that the Endangered Species Act was merely an esthetic decision by Congress. The hearings were quite clear that, again and again, we have discovered—often at the last moment—that an endangered species has an importance to human beings in a variety of ways that otherwise we would not have known, and that, therefore, Congress establishes a priority in favor of the protection of the species.

Mr. LEGGETT. Do you believe that the benefits to be derived from the snail darter are not in the snail darter itself, but in the valley in which it last dwells?

Mr. PLATER. I think it is probably, logically, impossible to separate them. That is to say that the snail darter apparently requires just those water qualities—shallow, clear, cool, flowing river water over shallow shoals—to survive. That is the quality that makes this, in this committee's terms, such a prime fisheries and sport resource. It is the last place left where you can have family float trips on such clean flowing waters with no dangerous rapids. It is cool fertile water and a fine trout habitat. The Tennessee Wildlife Resources Agency has estimated that this one stretch of river alone, the upper 17 miles of the river which would be destroyed, is the equivalent of more than 600 miles of Appalachian trout stream; it is so rich.

Therefore, yes, the qualities that are important to human beings in this last stretch are precisely the qualities that the snail darter requires. In that sense, it is important to note that the citizens supporting this case are not just conservationists; there is a scientific organization; there are local people who care about wildlife; many sportsmen's groups; and of course the farmers were in on it from the beginning—it is a wide diversity of people.

Mr. LEGGETT. Are the trout streams in this river valley better than the trout streams in the other dammed portions?

Mr. PLATER. The trout in Tennessee have largely been eliminated in the areas where there have been dams. Dams have converted these valleys into slow moving, often stagnant, warm water places. The trout fishing has dropped off. There is some bass fishing that comes in.

But it should be noted that in Tennessee, the TVA drops the lake down for 6 months a year, so that it is not even natural lake conditions; you have got mud flats for 6 months, and then back up again. It is not prime fish habitat, with a few exceptions in new lakes.

This river is extraordinary, and was so for the Cherokees. The Cherokees apparently came here, to the Little Tennessee River valley, which would be covered now by 20 feet of mud and water,

because of the richness of the fish life, the richness of the agricultural land, and the protected forests in the valley, as well.

Mr. LEGGETT. How can this river be so great if the benefits from the dam are so marginal? I mean, you would think if it is a raging stream, there would probably be more power benefits than there are.

Mr. PLATER. That is a good question. I think that, later, when we have our delegation from Tennessee here, we can go into that in greater depth. But the answer is simply this: This is the last and most marginal dam. It was too small to justify buying generators; it is in a computer-controlled network of dams, so that its flood control function was miniscule. The only way that this dam could be justified was to make the Tellico project bigger than the dam. It is a \$120 million project for the development of subsidized industrial lots, and the dam, of course, is only a tiny portion of that.

The two primary justifications were subsidizing industrial lots—the Boeing Corp., having lost the SST, was going to come in and develop a city there, sell back the land condemned from the farmers at a profit to help pay off the project costs—and the second was flat water recreation, in an area where you have got 22 major lakes within 60 miles.

If you will note here on the map, the snail darter is left in the middle of all of these dams which already provide ample flat water recreation. In fact, Tennesseans have more flat water recreation impoundments per capita than any other citizens on the face of the planet.

If the snail darter were not there, there would have been no legal way to raise the issue, but as I say, the issues are biologically and logically linked.

Mr. LEGGETT. As the snail darter was slowly heading toward extinction, did anybody ever raise the point that they were missing the accouterments of observing the snail darter or taking it for bait?

Mr. PLATER. The snail darter was only discovered in August of 1973. And its value to scientists is that it is highly sensitive to this special high-quality habitat; that is to say, it used to live wherever the water was cool, clear, fertile, and free-flowing. One by one it has been eliminated; this is the last place.

So, the scientists treated it as a highly important biological discovery. Our concerns, obviously, go beyond the biological, to the question of what it means for human beings in a more direct sense—no, you cannot extricate the two.

As a matter of fact, the alleged insignificance of the endangered species also has been the basis of serious criticism of the act, as you can imagine, reading the newspapers, when they say, "Little fish versus big dam: The act is inflexible." The act, however, is not inflexible. It appears that the only inflexibility in this story lies with the agency, as it did as well in the Mississippi sandhill crane case.

The Senate hearing record from last July is filled with testimony by opponents as well as proponents of the act. Nowhere in there, however, did the opponents of the act find an irreconcilable conflict. Even with the *Tellico* case, flexibility options were suggested to TVA from the very beginning. Since this dam is only a marginal

and a dispensable part of the economic development project, it was suggested, why not develop the river for something else? TVA said that was infeasible, 25,500 acres of prime agricultural land are there and would be destroyed, but there is no possible use for that farmland. There are 14 major Cherokee historical sites leading up along the river into the Smoky Mountain National Park, which has 10 million visitors a year. The TVA said that there was no possible benefit from tourist visitation through the unflooded valley. The industrial sites proposed would have an extra 2 square miles of available land if you do not flood the valley. . . . I do not want to go into personal points, but it must be said that from the very beginning, in 1973, the agency quite simply declined to consider what every other Federal agency has done: Some modifications of the basic project, so as to accomplish the purposes of public development as well as endangered species protection.

The agency stuck with its original dam project without considering any modification or compromise. I think that this is an important case study, therefore, not only for Tellico, but for the oversight review this committee is considering. You are to be congratulated for avoiding the burlesque that could be—has often been—made of Tellico, but rather saying, "We want the facts," and asking for the GAO study. On the facts, both in Tellico and looking at all the other cases, there has never yet been any irreconcilable conflict. As in 1970 when you passed the National Environmental Policy Act, the best strategy is to wait and see.

Mr. LEGGETT. But the problem is that we have 1,800 different kinds of plants for potential listing as endangered and we do not know how many could also be listed. Of course, we have not really gotten into the area of small bugs.

As far as dumping the dough, we have done that. I have got a project in my district called the Marysville Dam. Again we had people scrapping with it and we are trying to balance a Corps project there. We dumped about \$20 million, and now we have it on a site where it costs \$1 billion to build and we do not think it is really quite pragmatic to build it.

Then we have got the Auburn Dam, where we have \$100 million worth of cement sunk into the foundation, and we have determined that based on reasonable scientific certainty, construction of a dam on that \$100 million worth of cement and foundation could, in fact, pose a danger to the cities below it such as Sacramento.

As a result, I think they have determined that they are probably going to sack the \$100 million. It does mean they are going to sack the dam, but they are prepared to sack the amount of dough they have in there and develop alternative programs, if they can do that with reasonable safety.

This project appears to be in question, in large part because we are trying to save a small fish. Nobody to this point has attempted to point up any value of the small fish, other than the fact that it is endangered.

Mr. PLATER. I would make a couple of points. The first is, as you correctly note, we are not talking about dumping \$120 million in this case. As a matter of fact, the GAO indicated that while some of the expenditure would be written off, in return a river based development might be several times more profitable than the origi-

nal; that is to say, the profit from the Tellico Dam would be greater by just holding the dam without filling it, and developing the valley, than it would be by killing the snail darter and destroying the valley.

Second, I would note that an endangered species listing does not a conflict make; that is to say, there may be 1,700 plants put on the list, but that does not mean that progress comes to a halt. The way to handle the potential problems is to say, "Well, let us wait and see if, indeed, this brouhaha turns out to have any substance to it."

Mr. LEGGETT. Well, that is why I really disagree with some of the procedures they are going through now. I think that a particular specie either is or is not endangered.

Mr. PLATER. It is a biological decision.

Mr. LEGGETT. And the question should come up as to what to do as far as designation of critical habitat. At that point, that is really where the rubber meets the road. I would just as soon like them to separate the two, as they did in the Tellico process, rather than amalgamate the two, which might preclude designation of endangerment.

Mr. PLATER. I believe, in effect, they do that; they just publish them now at the same time. But you are right; whether it is endangered or not is essentially a biological decision. Where you draw the critical habitat line involves, I assume, some subjectivity.

Ultimately, as you say, nobody is talking about the value of just one species, per se, to itself, and I think that is realistic. Everything, we have learned, is connected to everything else; you cannot look accurately at anything out of context.

I congratulate the committee for building the factual context and for reviewing the Tellico case and these other cases on their facts, and not in terms of the exaggerations. I fear that that is not the way the debate has generally been heard up until now, and that accordingly Congress is being asked by the act's opponents to buy a red herring.

To say that the act has brought progress to a halt is to anticipate a mere conjecture. I look forward to exploring the *Tellico* case with the committee with the delegation from Tennessee, which will be coming up, I understand, on the 22nd of this month. This was just a brief summary, and I hope it helps to get some of the factual record clear.

If there are other questions, I would be glad to answer them.

Mr. LEGGETT. It is very helpful to the subcommittee, and as I understand it, the Court will be making a decision here at the end of the month.

Mr. PLATER. It is hard to predict the Supreme Court, but sometime within a month.

Mr. LEGGETT. That is our information.

Mr. PLATER. Thank you for sharing that. I will have to run to the airport, so if there are any other questions—

Mr. LEGGETT. Mr. Thornton wants to ask you some questions.

Mr. THORNTON. Professor Plater, you have indicated, of course, that the dam is a small portion of the project, and yet could you accomplish the original goals of the Tellico project without the dam?

Mr. PLATER. That, of course, is a very important, basic question. I believe you have seen in the Tellico environmental impact statement and in the briefs in this case that the Tellico project had two major functions.—It was never authorized by Congress; TVA is a self-authorizing agency, so that Congress never voted to allow the Tellico Dam to be built.

Mr. THORNTON. The Appropriations Committee did, however.

Mr. PLATER. Right, but it was a lump-sum grant. The Tellico Dam has never even been mentioned in substantive legislation of Congress.

The point is that the two justifications were: No. 1, more flat water recreation in this last impoundment; and, two, industrial development. As we have noted, recreation, if the Authority were to develop it, can be better developed without the dam than with it. Industrial development, likewise, does not require a dam.

Mr. THORNTON. That may be so. And yet, the decision was made by TVA, and likewise by Congress, when they appropriated money for the project, that the dam was the preferred way of encouraging development in the area.

Mr. PLATER. I would note that Congress never heard of the available alternatives. There was never a presentation of a program of alternatives, for the TVA essentially said: "We have decided to build this. Now, you can either take it or leave it. Fund it or do not fund it, but we have decided to build it or nothing."

Mr. THORNTON. Did groups that are opposed to the dam concept oppose the dam at the time when Congress was considering appropriating money for the project?

Mr. PLATER. Down in Tennessee, until recently, it was very difficult to be heard, raising suggestions for alternative courses of action. There are some people who did come up here some of the farmers whose entire farms were being condemned, even though 1 acre or less would be flooded. But it wasn't much of a contest.

To answer the question about frustrating Congressional purposes, the purposes that Congress justified the project for were recreation and industrial development. I believe the compromise that can be worked out, between the citizens who want to protect this last river and the TVA, is to accomplish precisely those two benefits that justified the project in the first place: Recreation, industrial development, and add to it, agriculture—25,500 acres of prime class land—and tourism.

Mr. THORNTON. Turning to another statement, that is, your allegation that after all the consultations to date, there has never been a direct irreconcilable conflict. You can foresee a hypothetical situation, however, where there might very easily be an irreconcilable conflict, that is, a conflict where there is no way that the projects can be modified to permit the original intent of the project to go forward, and at the same time preserve the endangered species. How would you handle that situation?

Mr. PLATER. That of course is a very hard decision for any governmental body to make, for anyone to make, and it is fortunate that has never, indeed, occurred. But I would have to take the position that if it did occur, there must indeed be a concession, that in some cases a species must give way to the clear public benefit requirements. This would not necessarily mean that the planned

benefits of the project should always prevail—that would be a self-fulfilling prophecy—but rather that if the net public injury in general would be so great, from permitting the species to be conserved, then, I believe there must indeed be an accommodation.

That happens with other laws all the time. When the Internal Revenue Code is found to create a particular problem that hurts the Treasury, and so forth, Congress considers a specific exemption, a bill to amend. It gets all the facts and it makes a decision, in its wisdom.

I am not going to say that the Endangered Species Act should be absolute, but the procedure is there, and it appears to be working. And the fact that we have a strong law means that the agencies pay attention.

Mr. THORNTON. You testified that the listings, or nonlisting of a species is solely a biological decision. Is that not true also for the designation of critical habitat?

Mr. PLATER. I am not a biologist, but I believe that these are two separate processes. There is more specific agreement in the scientific community on what is or is not an endangered species. For instance, in the snail darter case, the Smithsonian was able to certify; yes, this is a species, it appears to require this habitat. So, there is agreement on what is an endangered species. But it is much harder to define with lines on a map the exact geographic locus of a species' "critical habitat".

Mr. THORNTON. Are you suggesting, however, that political, sociological, economic considerations should be evaluated before the Department of the Interior designates the critical habitat?

Mr. PLATER. No. I do not think anybody wants to make the listing of critical habitat into a political football. By the way, it should be noted that designation of critical habitat here in the hearings has sometimes been characterized as tantamount to a freeze on all activity. That is not the case. A listing of critical habitat only poses a "checkoff", a reminder to Federal agencies that are going to be working in the area, that they must first consider whether there is any effect on a species.

I do not think that politics have any business in the biological decisions entailed in listing the critical habitat.

Mr. LEGGETT. All right. The meeting will stand in recess while we answer a rollcall.

Mr. PLATER. Thank you.

[Recess taken.]

Mr. LEGGETT. The subcommittee will come back to order.

Christine, would you like to go next?

Mrs. STEVENS. Thank you, Mr. Chairman.

Mr. LEGGETT. Please give Christine a microphone, gentlemen.

Mrs. STEVENS. May I submit my statement for the record?

Mr. LEGGETT. It will be included as though you read it.

[The statement follows:]

STATEMENT OF CHRISTINE STEVENS, SECRETARY, SOCIETY FOR ANIMAL PROTECTIVE
LEGISLATION

Mr. Chairman, the Endangered Species Act of 1973 is the foremost legislation for the protection of wildlife in the entire world. It stands as a monument to the work of this Subcommittee. The entire environmental community looks to each and every member to stand firmly behind your creation. It is a law which has made the

United States outstanding among all nations, an admirable law which inspires admiration of our country. It is a law which, despite inadequate funds for administration and enforcement, has worked extremely well.

4- We appreciate this committee's action in increasing authorization for funding for the next three fiscal years. It is very important that increased numbers of permanent personnel be approved, too. As I mentioned in testimony April 14th, there are only six inspectors for New York, and I would remind the Subcommittee again of the discovery of a ring of international fur smugglers in 1973 by pure chance when a carton marked leather goods broke open and an alert airline employee noticed spotted cat fur sticking out of the crate. Clearly, Interior did not have enough inspectors then to examine shipments for accuracy, or the smuggling would have been detected in a routine inspection. Equally clearly, six inspectors for a port the size of New York is inadequate, and throughout the entire country there is only a total of 35.

At the present time, there are at least 15 part-time or temporary appointments which cause a substantial turnover among these inspectors, reducing their ability to gain experience in the job. We urge that the Congress give Interior the wherewithal to do the job that needs to be done.

The Department of the Interior estimates that there will be approximately 20,000 external consultations under section 7 in 1979. It is estimated that the Fish and Wildlife Service will handle 4,000 internal consultations in addition. From 1973 to 1978, approximately 4,500 consultations were undertaken. Three thousand more are expected during this year. The reason for the great increase is that the regulations were published January 4th of this year, and all the agencies are now fully aware of them. Prior to publication of the regulations, the consultations were optional. They are now mandatory.

The Fish and Wildlife Service estimates that 105 full-time people are needed to carry out the consultation process. At present, the Service is grossly under-manned to handle the current and anticipated consultation load. These consultations are the only rational means to insure that government projects do not destroy endangered species. Clearly, it is necessary to have qualified, competent people to carry out this consultation process. It is imperative that Congress and the Administration provide the funds and the people to do it well.

As already noted, approximately 4,500 consultations have been successfully conducted. Only three cases in the past five years have gone to court: The case of the Indiana Bat in which the Appellate Court ordered consultation which had not been voluntarily entered into; the Mississippi Sandhill Crane, in which Highway I-10 was fully built but, because of a Court Order, the Department of Transportation acquired additional land to protect the Cranes' habitat at a major intersection. DOT has agreed to buy the land and give it to the Fish and Wildlife Service so the Cranes can continue to nest there.

This leaves only the now notorious case of the Tellico Dam. Mr. Chairman, it was indeed disturbing to me to hear testimony from residents of that area whose homesteads were seized when TVA exercised its power of eminent domain to evict these families from their property, to hear of the cutting down of two hundred-year-old trees during the nighttime in a ruthless move to finish the dam, regardless of the protests. But others who are familiar at first-hand with this sorry tale can report upon it more fully than I. I would only emphasize that, so far, Tellico is the only case which has not been resolved under section 7 of the Endangered Species Act.

We recognize that problems will arise, but we believe that the overwhelming majority of them can and will be solved by the existing consultation process if Congress leaves the Act intact and provides adequate personnel and funds to carry out its intent.

It is true that development will have to be modified in some cases. A planned highway, for example, may have to be designed to go around, rather than straight through, a favored nesting ground of a threatened or endangered species of bird. Surely it is worthwhile to make such a modification. Yet there are those who take an absolute position against any modification of a government project. We believe there is an overwhelming majority of Americans who want to keep our country healthy and safe for future generations by protecting the ecosystems that support the magnificent diversity of wild species now inhabiting the United States. The health of these many species reflects health for the human environment. It is true that we cannot foresee and foretell in every instance how loss of species will affect us in the future, but we do know that we will be the poorer for every loss and that nothing any human being can do can restore a species once gone.

As science and technology develop, more and more strange facts come to light. Animals and plants once scorned can, as their properties are discerned with a new scientific eye, become immensely valuable. It is a good investment to save our natural heritage, a variety so rich as to be difficult for the mind to grasp.

If, on the other hand, we follow the recent path of increasing destruction of species every year, we are conducting an enormous experiment without any scientific controls. I would be a form of human experimentation which certainly would not be tolerated under the guidelines of the Department of Health, Education and Welfare which prevent dangerous experiments on human beings. Whenever we move to impoverish our environment, we endanger ourselves.

There has been some discussion about the difference between small species and large ones, and it may be thought that it is small creatures that are hindering development. Yet, among some possible problems in consultation, we see the largest sea mammal and the largest land mammal in the world, the whale and the elephant.

Section 7 is designed to protect critical habitat for all species, large or small, popular or unpopular, well known or virtually unknown, and, at the present state of our knowledge, there is no way to ascertain what their value may be to future generations of our own kind.

Who would have dreamt that one of the most ancient invertebrates, *Limulus polyphemus*, would become an important animal model for the study of coagulation and hemostasis in man. Hemostasis, or arrest or hemorrhage, is obviously of enormous life-saving importance. *Limulus*, commonly known as the horseshoe crab, though it is not a crab at all, has blood which, instead of being red, is blue. I would submit for the use of the Subcommittee a copy of the monograph, *Animal Models of Thrombosis and Hemorrhagic Diseases*, which was sponsored by the National Heart and Lung Institute and the National Academy of Science's Institute of Laboratory Animal Resources in 1975. In concluding his paper, Jack Levin, M.D., stated:

"These observations and investigations of pathophysiologic states of coagulation in other invertebrates (Table 3) suggest that studies of blood coagulation in *Limulus*, and in other invertebrates, will provide insights into the various mechanisms by which platelets react to different stimuli and by which mammalian blood coagulation is initiated."

Note that Dr. Levin emphasizes studies in other invertebrates. Thus, the creatures which used to be referred to as "humble" may come into their own playing key roles in the solution of vexing problems of human disease and suffering.

An editorial in *The Christian Science Monitor* May 17, 1978, stated in part:

"The problem, of course, is whether any group of human beings can realistically determine the intrinsic and ecological value of a form of animal life. And who can say what impact its disappearance would have on the balance of nature? The interdependence of species at best is difficult to determine, and once a type of wildlife is consciously extinguished, it would be too late to change the law.

"The current law in the vast majority of cases has proved flexible enough to accommodate the interests of builders and conservationists alike.

"With animals being destroyed at an average of one species a year, and industrialization making new inroads into the few remaining wilderness areas, Congress should keep in mind that environmental decisions today will have an impact on generations in the future as well."

Mr. Chairman, I have great respect for Senator Culver, who repeatedly stated from the Chair that his Amendment was offered with a view to saving the Endangered Species Act. The Act must be saved, but we believe it is much too early to make a judgment against the functioning of the Act, against its ability to permit ongoing federal actions and save endangered species. So far, the history of Section 7 and its administration is good. It demonstrates that good-faith efforts to solve problems have worked over and over again. Surely, there should be a test of at least a year or two before Congress decides that the Act needs amendment. We are unalterably opposed to changing Section 7.

Endangered species cannot be saved unless they have their home grounds to live on.

Mrs. STEVENS. I will just pick out points that I think need special emphases, if I may.

I have said this many times, Mr. Chairman, but I do feel it needs emphasis that the Endangered Species Act is the foremost legislation for the protection of wildlife in the entire world. It stands as a monument to the work of this subcommittee. The entire environ-

mental community looks to each and every member to stand firmly behind your creation. It is a law which has made the United States outstanding among all nations, an admirable law which inspires admiration of our country. It is a law which, despite inadequate funds for administration and enforcement, has worked extremely well.

I would like to emphasize the international effects of any U.S. actions. They can be critical, because of the fact that we are the world leader and influence not only the other 43 countries that have now ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora, but other nations whom we hope will join.

Greater destruction could easily take place in the whole world, and we have to think of the effect that will be created, should we weaken our law.

To get to some of the points that are necessary for the Department of the Interior, the Department estimates that there will be approximately 20,000 external consultations under section 7 in 1979. It is estimated that the Fish and Wildlife Service will handle 4,000 internal consultations in addition. From 1973 to 1978, approximately 4,500 consultations were undertaken. Three thousand more are expected during this year. The reason for the great increase is that the regulations were published January 4 of this year, and all the agencies are now fully aware of them. Prior to publication of the regulations, the consultations were optional. They are now mandatory.

Mr. LEGGETT. Three thousand more what are necessary?

Mrs. STEVENS. Consultations.

Mr. LEGGETT. Consultations?

Mrs. STEVENS. That is right. That is what the Fish and Wildlife Service estimates is going to be necessary in order to carry out the work.

Mr. LEGGETT. What if they do not have the people to do all that?

Mrs. STEVENS. That is why I am bringing it up. It is extremely important that they should have the people and funding, in order to do that, and I think this committee can go a long way to avoid the kind of confrontations that everybody is concerned about. That obviously is the reason that you are holding hearings. Provision of such manpower and funding will probably do far more than any change that you could possibly dream up, in the actual legislation.

In other words, the consultation process, so far, has been highly effective. The percentages are enormous. I mean, it is 99.999 success. But if they do not have enough people and money, that could conceivably change.

The Fish and Wildlife Service estimates that 105 full-time people are necessary to carry out the consultation process. At present, the Service is grossly undermanned to handle the current and anticipated consultation load. These consultations are the only rational means to insure that Government projects do not destroy endangered species. Clearly, it is necessary to have qualified, competent people to carry out this consultation process. It is imperative that Congress and the administration provide the funds and the people to do it well.

Well, now, you have heard pretty much about the 3 cases that have not worked, out of the 4,500.

Mr. LEGGETT. The Indiana bat, we have not talked about it.

Mrs. STEVENS. I think I should not be the one to go into detail in that. Both Dr. Zagata and Dr. Berger are more fully qualified.

But, in the case of the highway, the court order, as I understand it, simply told the highway commission that they would have to consult and meet whatever the Fish and Wildlife Service required of them. What is proposed is that they buy some land and give it to the Service, so there is no real problem there. All they have to do is buy the land and let the cranes nest there. The cranes do not seem to care if the highway goes through. They just have to have some land that is not all paved over with parking lots and hamburger stands.

Now, to discuss in general, it is true that development will have to be modified in some cases, as a planned highway, for example, may have to be designed to go around, rather than through a favored nesting ground. Surely it is worthwhile to make such a modification. Yet there are those who take an absolute position against any modification of a Government project. We know there is an overwhelming majority of Americans who want to keep our country healthy and safe for future generations by protecting the ecosystems that support the magnificent diversity of wild species now inhabiting the United States. The health of these many species reflects health for the human environment. It is true that we cannot foresee and foretell in every instance how loss of species will affect us in the future, but we do know that we will be the poorer for every loss and that nothing any human being can do can restore a species once gone.

As science and technology develop, more and more strange facts come to light. Animals and plants once scorned can, as their properties are discerned with a new scientific eye, become immensely valuable. It is a good investment to save our natural heritage, a variety so rich as to be difficult for the mind to grasp.

If, on the other hand, we follow the recent path of increasing destruction of species every year, we are conducting an enormous experiment without any scientific controls. It would be a form of human experimentation which certainly would not be tolerated under the guidelines of the Department of Health, Education, and Welfare which prevent dangerous experiments on human beings. Whenever we move to impoverish our environment, we endanger ourselves.

I would like to give you, Mr. Chairman, a copy of this monograph, "Animal Models of Thrombosis and Hemorrhagic Diseases," published by the Department of Health, Education, and Welfare, the Public Health Service.

Mr. LEGGETT. The clerk will collect that from you, and it will be delivered to the chairman.

Mrs. STEVENS. Well, Mr. Chairman, I have a paper in it on humane treatment of laboratory animals. But the reason I am sending it up is not for my paper—which is not relevant in this particular case—but to one on the horseshoe crab, *Limulus polyphemus*. Who would have dreamt that one of the most ancient invertebrates, *Limulus polyphemus*, would become an important

animal model for the study of coagulation and hemostasis in man. Hemostasis, or arrest of hemorrhage, is obviously of enormous lifesaving importance. *Limulus*, commonly known as the horseshoe crab, though it is not a crab at all, has blood which, instead of being red, is blue.

I would quote from that paper by Dr. Levin:

These observations and investigations of pathophysiologic states of coagulation in other invertebrates (table 3) suggest that studies of blood coagulation in *Limulus*, and in other invertebrates, will provide insights into the various mechanisms by which platelets react to different stimuli and by which mammalian blood coagulation is initiated.

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The current law in the vast majority of cases has proved flexible enough to accommodate the interests of builders and conservationists alike.

With animals being destroyed at an average of one species a year, and industrialization making new inroads into the few remaining wilderness areas, Congress should keep in mind that environmental decisions today will have an impact on generations in the future as well.

Mr. Chairman, I have great respect for Senator Culver, who repeatedly stated from the chair that his amendment was offered with a view to saving the Endangered Species Act. The act must be saved, but we believe it is much too early to make a judgment against the functioning of the act, against its ability to permit ongoing Federal actions and save endangered species. So far, the history of section 7 and its administration is good. It demonstrates that good-faith efforts to solve problems have worked over and over again. Surely, there should be a test of at least a year or two before Congress decides that the act needs amendment. We are unalterably opposed to changing section 7.

Endangered species cannot be saved unless they have their home grounds to live on.

Thank you, Mr. Chairman.

Mr. LEGGETT. And plants too?

Mrs. STEVENS. Yes; plants need it.

Mr. LEGGETT. You are not a defender of plants?

Mrs. STEVENS. No; we are not a defender of plants. We think we are spread thin enough, as it is, but I would say this: I had an aunt who was probably the most able transplanter of strange, wild plant species, that I have ever known.

Mr. LEGGETT. That is where you got it.

Mrs. STEVENS. Well, because of that experience, I am inclined to believe that the transplantation of plants, though requiring great care is vastly easier than that of animal species, and that therefore it is not necessary to be as concerned when you hear that 1,800

plants are to be listed—you sort of, you know, fall apart. But I do not think that is necessary.

In other words, it is almost certain that suitable places can be found where they will grow and maintain themselves if people like my aunt can be found to help them take root. I believe that can happen, so plants are unlikely to cause difficulties.

Mr. LEGGETT. It is all a question of how you talk to them.

Mrs. STEVENS. Well, she never talked to them, but she noticed what suited them: what kind of soil, how much sun or shade, and all those things plants need. I would reassure you that even though it is not part of our work to protect them—

Mr. LEGGETT. We are going to do this as a panel. We will have questions for all of you, maybe at one point, so the next witness would be Dr. Berger.

Dr. BERGER. Good afternoon, Mr. Chairman. I appreciate your patience and tolerance in this matter.

Mr. LEGGETT. And you have got a long, 13-page statement, which will be included in the record, including your resolution on behalf of the Tennessee Conservation Committee.

[The statement follows:]

STATEMENT OF MICHAEL E. BERGER ON BEHALF OF THE NATIONAL WILDLIFE
FEDERATION

Mr. Chairman, I am Michael E. Berger, Assistant Conservation Director for the National Wildlife Federation which has its headquarters at 1412 Sixteenth Street, N.W., here in Washington, D.C. I am a professional conservationist with degrees in Wildlife Management and Resources Development. Ours is a nonprofit, nongovernmental organization which has independent affiliates in all 50 States, Guam, Puerto Rico, and the Virgin Islands. These affiliates, in turn, are made up of local groups and individuals who, when combined with associate members and other supporters of the Federation, number an estimated 3.5 million persons. We welcome and appreciate the opportunity to speak to you about the need to extend the authorization of appropriations for the Endangered Species Act of 1973.

The NWF is dedicated to conservation education and emphasizes the concept that wildlife is a renewable resource only as long as suitable habitat is available. We believe that the Endangered Species Act of 1973 embodies this important concept as one of the most far-sighted and comprehensive pieces of legislation ever enacted for the protection of wildlife. The Federation has urged a strong National Commitment to the passage of endangered species legislation. Today we are pleased to be speaking to you concerning our involvement with this act and its administration.

The Federation has long been active in programs to protect and preserve species such as the prairie chickens, bald eagles and whooping cranes but without the strong unified approach that this Act represents, we were losing ground. The Act offers the necessary regulatory and statutory authority and the potential for funding needed to affect a reduction in the current high rate of extinctions.

In this Act, Congress recognized our responsibility to conserve these natural resources—both in recognition of their place in our nation's heritage and in our international commitment.

The Endangered Species Act of 1973, as had its legislative predecessors, focuses on the importance of habitat protection as a direct method to help prevent future extinctions. It recognized that commercial exploitation, pollution and a number of other factors can contribute to the demise of a species, but the loss of the habitat necessary for the existence of endangered wildlife and plants is by far their greatest single threat. Environmental destruction and the loss of living space due to man's activities has increased profoundly in the last few decades. The acquisition of lands for endangered or threatened species is an important element of both State and Federal efforts outlined in this Act. The Act further stresses the importance of the habitat and species protection concept, in Section 7, by encouraging conservation and habitat protection for listing species on Federal lands and in activities that are federally funded or authorized.

The Endangered Species Act recognized the importance of garnering all the available resources both to protect and to increase the populations of animals and

plants that are now endangered and to make sure that no actions are taken that will contribute to the further endangerment of these vulnerable species. The various sections of the Act are all complimentary and the fore necessary to provide an effective program for ensuring that wildlife will protected for future generations. None can stand alone.

Section 7 is indeed necessary as an integral element of this expansive effort but becomes even more important because its successful implementation serves as an enlightened, responsible example for others to follow.

The NWF recognizes that with human population increases, disturbances to species will continue and habitat will be lost. Without Section 7 of the Endangered Species Act, we will lose any hope of achieving a uniform federal conservation posture which will result in the conservation and preservation of endangered species. Section 7 was not conditioned to be interpreted only when economically advantageous to any agency or when consistent with their special interest. The Act was intended to be applied in all cases. It is an attempt to balance the concern for endangered species with the concern for economics and other special interests. The Secretary of Interior, who acts through the Fish and Wildlife Service, appropriately occupies a pivotal role in the implementation of the Act by issuance of biological standards for protecting species. But overall the success or failure of this critical endeavor depends on the achievement of voluntary compliance by other federal agencies and the participation of state agencies.

The Act does recognize that there are endangered species that are presently highly valued in the market place, but also includes all others by finding that these endangered and threatened species "of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." Prior to this Act's inception, few arguments for these vulnerable species stood up under the great pressure to manipulate and disrupt natural environments for economic and population growth. Granted there were examples of species that in special cases received public support against unrestrained development, but overall no one felt a responsibility for representing the interest of all species. The appropriate truism is that there is rarely any responsibility shown in decision-making when those who make those decisions do not have to suffer the consequences. All species are susceptible to man-made disturbances and now have a recognized value by virtue of this Act. An example of the danger of setting of values of endangered species in the marketplace was illustrated when the state of Texas was asked how much a whooping crane was worth—the answer "not very much." They considered the value of oyster shells dredged for road building more important, even though that dredging resulted in loss of critical habitat and silting of the whooping cranes' food supplies. The value of a healthy, balanced ecosystem should be obvious, but is usually overlooked until it is too late. We are slowly realizing the value of a diversity of species.

A community's variety of butterflies is a most reliable indication of the suitability for both human and non-human existence; mayfly populations show the purity of flowing waters; types of slow growing lichens attests to the quality of unpolluted air. Many species give us early warning of deterioration—of our own potential endangerment. Seemingly unimportant life forms can contribute invaluable benefits to the living world that we all share: studies to both understand and expand physiological capabilities depend on many obscure animals; bees pollinate crops valued at over \$6 billion per year as well as countless types of fruits and seeds necessary for wildlife; many potential human cancer cures are discovered in plants and animals; many antibodies are derived from plants; $\frac{1}{10}$ of the world's oxygen comes from seemingly useless vegetation and weeds; many natural pest controls are insects and small fish (species of killifish protect many countries from mosquito and parasitic infective carriers of dread diseases); and wild species of plants and animals are necessary to improve domestic and cultivated strains for food sources. The examples are only limited by our imagination and the resources available for research. Conservation of these species gives us the raw materials, the genetic heritage concealed within these species. It keeps our options open for the time when our ability to recognize the specific value of a plant or animal is as advanced as our present ability to destroy habitat that result in the species extinction. The evolution of a single species is a process that may take millions of years and can never be duplicated. No logical line can be drawn as to which species would live or forever be wiped from the face of the earth. This act subscribes to the basic belief that man's place on earth is as a tenant; of stewardship and enjoyment of the harvest of each year but not of destruction of its source. Aldo Leopold said it best: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise."

Many Federal agencies have recognized the need to "consider" wildlife in carrying out their overall objectives. The problem is that "consideration" hasn't proved effective; a stronger mandate is needed to protect endangered species. For example, Department of Transportation Federal Highway Administration Publication, "Environmental Considerations in Transportation Planning" concluded " * * * transportation planner and highway engineer * * * must begin to identify effects early at the system planning phase. The planner and engineer must present the information to the public and the decisionmakers so that decisions on transportation facilities and services can be made in the best overall public interest. The planner must develop alternatives that present real choices in terms of environmental impacts, and most importantly, he must involve the public in the identification of environmental effects and in the making of trade-offs among alternatives. Environmental factors must be identified and studied during system planning and followed through the program and project stage." All of this nice language notwithstanding, we were obligated to come to the aid of the 40 remaining endangered Mississippi Sandhill Cranes whose existence was being jeopardized by a highway interchange planned for Interstate 10 near Gulfport, Mississippi. We (and our Mississippi affiliate) filed a complaint against the Department of Transportation not to stop the highway but only to make certain that it was built in a way compatible with the survival of the cranes. After the court ruled the Endangered Species Act had been violated, good faith discussions of alternatives acceptable to both the Fish and Wildlife Service and Department of Transportation have begun and negotiations look promising. This could have been achieved without reliance on the courts if good faith negotiations under Section 7 of the Endangered Species Act had been conducted at an earlier stage.

On the bright side—proving in fact the point we've just stated—NWF was recently involved in one of the many examples of the good faith negotiations leading to the resolution of a possible endangered species conflict. It involved the endangered Bachman's warbler whose best known habitat is in the 4,500 acre I'On Swamp in the Francis Marion National Forest in South Carolina. The habitat was threatened by proposed clearcutting by the U.S. Forest Service. An NWF lawyer investigated the problem and proposed a reasonable alternative, a three person arbitration panel with wildlife experts from U.S. Forest Service, Fish and Wildlife Service, and The Wildlife Society. A moratorium was agreed upon until a recommendation was received from the panel. The guidelines agreed upon by the parties involved in the mediation have been used to reach a biological opinion under Section 7 consultation and promises again to avoid future problems.

"To use all practicable means and measures including financial and technical assistance, in a manner calculated to foster and promote the general welfare to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economical and other requirements of present and future generations." Prior to taking any Federal action with significant effects to the environment certain procedures should be followed and these involve the consideration of alternatives to the proposed action and consultation with other Federal agencies which have jurisdiction because of law or special knowledge of any environmental impact involved.

Fair consideration of alternatives is the heart of NEPA. Secondary or indirect effects are to be considered, such as development, which can be even more substantial than primary effects. Neither was done adequately in the case of Interstate 10. The Endangered Species Act of 1973 gives the Department of Interior both the resources necessary and the responsibility for response on behalf of endangered species in the NEPA process.

The Fish and Wildlife Coordination Act requires Federal agencies, any time they are funding or issuing permits for modifying a water body of the U.S., to consult with the Fish and Wildlife Service and the state agency with supervisory authority over fish and wildlife, prior to taking action. Serious consideration must be given to the recommendations of these agencies for mitigation of impacts to fish and wildlife. It was the intent of Congress that some new habitat for wildlife would be acquired or improved every time an existing habitat was disturbed or destroyed by the construction of a Federal dam, reservoir, canal or channel. No law in action shows more dramatically the weakness of a law calling only for "consideration" of fish and wildlife species. Millions of acres of wetlands have been drained and filled, fish passages have been blocked, streamflows depleted, bottomland hardwoods destroyed, riverine habitat flooded out without mitigation for fish and wildlife losses. Entire states have yet to receive mitigation from any water project. If the long list of projects that have been approved and built had been done with a reasonable provision for habitat to offset what was destroyed perhaps we would now be talking

about situations where a project jeopardizes the continued existence of an endangered species or results in the destruction or modification of the last bit of habitat which is critical for its existence.

In light of the above mentioned opportunities for Federal decisionmakers to fully consider and balance environmental factors with a reasoned choice of alternatives, let's review Tellico, the only endangered species problem unresolved by the administrative and judicial processes. Our Tennessee affiliate, the Tennessee Conservation League has shown a very reasoned response on TVA's Tellico project. They have questioned the justification for the project and specifically objected that the energy and flood control benefits were exaggerated. Because they feel the overall NEPA process has been abused they have adopted a resolution urging that Congress request a thorough study of benefits and alternatives to the impoundment. We have attached this resolution to our testimony. TVA is exempt from the Fish and Wildlife Coordination Act. If they were not exempt and had complied with mitigation requirements, the snail darter, believed once to have been common in free flowing rivers throughout Eastern Tennessee, may well not have had its habitat reduced to such a degree through dam building and pollution. There are more than 20 large reservoirs within 100 miles of the present project.

TVA claimed it was also exempt from NEPA. The courts ruled otherwise. TVA produced an E.I.S. that reflected either inexperience or a total disregard for the intent of NEPA. The courts ruled it inadequate and required it to be rewritten. The new E.I.S. for the Tellico project was recently reviewed by the G.A.O. The report concludes that "the Congress should prohibit the authority from further work on the project and should not act on the proposed legislation to exempt the project from the Endangered Species Act until more current information is received."

It further recommended that TVA complete a comprehensive river-based development plan as well as update its benefit-cost data on the existing project plan.

The TVA also contended that the Endangered Species Act did not apply to them. After receiving notice from the Department of Interior in 1974 that if the snail darter were listed, impounding the river would "jeopardize the continued existence of the fish." TVA went on to spend \$50 million on the dam, much of it after the darter was finally listed in 1975. In short, in this one case which has posed what appears to be an endangered species act confrontation, the project proponent has viewed itself as an exception to the requirements of every piece of legislation which provides for consideration of wildlife needs early in the planning process.

It is our contention that sound, well-researched projects with opportunities for adversary input and honest, complete alternative presentations would negate the need for widespread civil suits or requested congressional review under Section 7 of the Endangered Species Act. To date there has not been a project that meets these review criteria and is conflicting with the critical habitat or existence of an endangered species. If in the future such a situation develops, then a substantive review through the judicial and possibly legislative process is necessary. The project, however, should be able to stand up to a thorough evaluation, and then, and only then, should Congress have to balance the benefits to be derived for the public welfare. But the ultimate choice of life or death of a species is up to Congress—the people we elect.

No one else is in a position sufficiently responsible to the American people to make such a decision.

Fortunately, for the preservation of endangered species, the great majority of agencies have willingly complied with the requirements of Section 7 and consulted in good faith. Through good faith consultation the intent of the Act is satisfied and potential differences resolved through negotiation. Final regulations were recently published which explain the consultation process to assist Federal agencies in complying with Section 7 of the Act. This rulemaking requires Federal agencies to consult with the Service if their activities or programs may affect listed species or their habitats. After such consultation, it is the responsibility of the involved agency to decide whether or not to proceed with the proposed activity in light of its Section 7 obligations. Under the new regulations, when Fish and Wildlife Service officials receive a request for consultation from another Federal agency, it is required that they evaluate an activity's impact within 60 days. At that time, the Service can determine that the activity will have no impact on listed species, that it will actually benefit the species, or that it is likely to have a harmful effect. The Service can request that further studies be undertaken in order for it to render its final biological opinion. Of an estimated 4,500 consultations in fiscal year 1977, before the procedure was mandatory, between Federal agencies and the Fish and Wildlife Service, only 124 became "formal" procedural consultations and of these only TVA's Tellico Project, Department of Transportation's I-10 and the Corps of Engineers'

Meramec Dam Project in Missouri, have not been resolved following this administrative process.

In the Meramec project, the court ruled there was insufficient evidence to prove that the project would cause a marked impact on the endangered Indiana bat but the dam has since been considered for deauthorization because of questionable project benefits.

A final problem under the Endangered Species Act is simple—money and manpower to effectuate its purposes. The U.S. Fish and Wildlife Service, for the Department of Interior, very appropriately assumed the major expansion of responsibilities that the Endangered Species Act of 1973 mandated. The intensive broadening of effort that this required was unfortunately not supported by a proportionate increase in funding or manpower commitments. There is no question but that this added to the difficulties in administering a program of this magnitude from the beginning—from the critical and often times controversial interpretation of many sections of the Act to the monumental endeavor involving the assessment of the status of thousands of species, subspecies and population segments of organisms worldwide. The NWF has been long and actively involved in much of the effort. We have sometimes been critical of the implementation of the Act. Recognizing the need for a comprehensive approach to providing advice on endangered species to Federal agencies for both fairness to the agencies and the species we are trying to protect. In August of 1976 we petitioned the Fish and Wildlife Service to publish a rulemaking for Section 7 of the Endangered Species Act.

We are pleased to see the increase of funds proposed in the President's 1979 budget request (\$3.8 million under endangered species planning and coordination) proposed for critical habitat designation and Section 7 consultation. The present administration demonstrated a commitment to natural resources and a healthy environment in the statement made by President Carter, "Environmental Protection is no longer just a legislative job, but one that requires and will now receive firm and unsparing support from the Executive Branch." Timely environmental impact statements are also requested for the improvement of NEPA. The recognition of the loss of fish and wildlife in land and water projects led President Carter to hasten the protection of endangered species by directing the Secretaries of Interior and Commerce to coordinate a government-wide effort to identify all critical habitats. The possibility that these habitats are not getting early enough consideration in project planning was his reason.

The necessary expertise and procedures for the implementation of endangered species activities has been carefully acquired by the Fish and Wildlife Service. They have met most of their responsibilities to date with a very well-considered thorough appreciation of their commitment to the purpose of the Endangered Species Act. It is our hope that these hearings result in a better understanding of the difficulties in the administration of some of the far-reaching and controversial elements of this legislation. But, more importantly, we must reaffirm our commitment to the purpose of the Endangered Species Act of 1973: saving endangered species from extinction through the forthright, expeditious and well-intentioned implementation of all sections of this legislation.

One problem with perceptions of the Endangered Species Act is that it is looked at in isolation. But the Act does not stand alone. It is part of an overall legislative package designed to minimize natural resource depletion while still providing for future progress. This package includes many other laws, the National Environmental Policy Act of 1969 (NEPA) and the Fish and Wildlife Coordination Act. NEPA calls for a continuing policy of the federal government.

RESOLUTION RELATIVE TO THE TELlico DAM PROJECT

Whereas the Tennessee Conservation League is vitally interested in the wise use of Tennessee's natural resources and,

Whereas the T.V.A.'s Tellico Dam project will destroy the last remaining free-flowing section of the Little Tennessee River, a unique river resource, and will inundate approximately 16,000 acres of prime farm and forest land, several ancient Cherokee Indian Villages, Indian mounds and two national historical sites and,

Whereas the impoundment of the reservoir will destroy the habitat of the snail darter, an endangered species and,

Whereas most of the benefit derived from the project is flat water recreation and industrial development and,

Whereas it appears that alternate uses of the lands involved could have an equal or higher economic benefit.

Now, Therefore Be It Resolved, That the Tennessee Conservation League through its Board of directors, meeting May 22, 1977, hereby urges the U.S. Congress and

the Tennessee Congressional Delegation to order a thorough study of the project and alternative to impoundment and to carefully study these alternatives before making any decision to exempt the Tellico project from the Endangered Species Act.

Dr. BERGER. Thank you, Mr. Chairman.

The National Wildlife Federation is dedicated to conservation education and emphasizes the concept that wildlife is a renewable resource only as long as suitable habitat is available. We believe that the Endangered Species Act of 1973 embodies this important concept as one of the most farsighted and comprehensive pieces of legislation ever enacted for the protection of wildlife. The Federation has urged a strong national commitment to the passage of endangered species legislation. Today we are pleased to be speaking to you concerning our involvement with this act and its administration.

The NWF recognizes that with human population increases, disturbances to species will continue and habitat will be lost. Without section 7 of the Endangered Species Act, we will lose any hope of achieving a uniform Federal conservation posture which will result in the conservation of endangered species. Section 7 was not conditioned to be interpreted only when economically advantageous to any agency or only when consistent with their special interest. The act was intended to be applied in all cases. It is an attempt to balance concern for endangered species with concern for economics and other special interests. The Secretary of Interior, who acts through the Fish and Wildlife Service, appropriately occupies a pivotal role in the implementation of the act by issuance of biological standards for protecting species. But overall the success or failure of this critical endeavor depends on the achievement of voluntary compliance by other Federal agencies and the participation of State agencies.

I stress voluntary compliance, because we feel this is the root of many present difficulties.

Many Federal agencies have recognized the need to consider wildlife in carrying out their overall objectives. The problem is that consideration has not proved effective; a stronger mandate is needed to protect endangered species. For example, Department of Transportation Federal Highway Administration publication, "Environmental Considerations in Transportation Planning" concluded:

Transportation planner and highway engineer must begin to identify effects early at the system planning phase. The planner and engineer must present the information to the public and the decisionmakers so that decisions on transportation facilities and services can be made in the best overall public interest. The planner must develop alternatives that present real choices in terms of environmental impacts, and most importantly, he must involve the public in the identification of environmental effects and in the making of tradeoffs among alternatives. Environmental factors must be identified and studied during system planning and followed through the program and project stage.

All of this nice language notwithstanding, we were obligated to come to the aid of the 40 remaining endangered Mississippi Sandhill Cranes whose existence was being jeopardized by a highway interchange planned for Interstate 10 near Gulfport, Miss. We—and our Mississippi affiliate—filed a complaint against the Department of Transportation not to stop the highway but only to make certain that it was built in a way compatible with the survival of

the cranes. After the Court ruled the Endangered Species Act had been violated, good faith discussions of alternatives acceptable to both the Fish and Wildlife Service and Department of Transportation have begun and negotiations look promising. This could have been achieved without reliance on the courts if good faith negotiations under section 7 of the Endangered Species Act had been conducted at an earlier stage.

Mr. LEGGETT. How much is it going to cost you to acquire that land?

Dr. BERGER. I do not know, in exact dollars. We are not talking about tens of thousands of acres; we are not talking about the entire proposed refuge area.

Mr. LEGGETT. We are talking about 17,000 acres?

Dr. BERGER. No; we are not.

Mr. LEGGETT. You are not?

Dr. BERGER. No; to my knowledge, we are not. The area to be acquired is land adjacent to the interchange under discussion, to prevent the commercial development of the area near the interchange. Commercial development was what was going to end up being the ultimate endangerment of those cranes.

I would like to relate a brief chronology of events that took place, regarding the highway and interchange, to demonstrate to you, hopefully, that it was not the Endangered Species Act which halted the project, but rather the unwillingness of the agencies to comply with the act.

The crane was listed in 1973, and consultation became mandatory with the passage of the 1973 act later that same year. The Federal Highway Administration failed to consult with the Fish and Wildlife Service, even though the final EIS did not issue until 1975.

After the EIS was issued, the Federation expressed opposition to they project, as proposed, to the Federal Highway Administration. We received no response.

Two weeks later, April 3, 1975, the Department of the Interior expressed concern that section 7 consultation requirements had not been met, and they pointed out the project changes they felt needed to negate the impacts. Not stop the project, but negate the impact. They received no response.

About 3 weeks later, on April 25, 1975, the Interior Department again expressed its opposition to the segment of I-10 that as currently proposed. They received no response.

Five days later, the Federal Highway Administration formally approved the project.

A week later, May 6, 1975 the Interior Department informed the Federal Highway Administration of their consultation obligations under section 7, and requested that they initiate such consultations. They received no response.

Three weeks later, the National Wildlife Federation filed suit.

All this delay could have been avoided and differences resolved through good faith consultations. But it was not. It was not the fault of the Endangered Species Act. The highway did not need to be stopped. What was needed, all that we originally asked, was for the borrow ditches—which drained the critical habitat of the cranes—to not be placed in the critical habitat of the cranes.

The Federal Highway Administration was already willing to do this in the area of the proposed crane refuge. This area needed to be expanded.

The interchange could have been moved. The Federal Highway Administration was unwilling to make that move. The land around the interchange, once it was built, needed to be purchased. They could have done this. These problems could have been resolved early on in the planning stages. In fact, in the final EIS for that portion of the highway, many of the problems associated with the cranes were pointed out. They considered the cranes. But they failed to consult and negotiate in good faith. The inflexibility of the Federal Highway Administration is what delayed the project, not the inflexibility of the act.

Fortunately for the preservation of endangered species, the great majority of agencies have willingly complied with the requirements of section 7, and have consulted in good faith. Through good faith consultation, the intent of the act is satisfied and potential differences have been resolved through negotiation.

Final regulations were recently published which explain the consultation process in greater detail. This rulemaking requires Federal agencies to consult with the Service if their activities or programs affect listed species or their habitats. After such consultation, it is the responsibility of the involved agency to decide whether or not to proceed with the proposed activity in light of its obligations. Under the new regulations, when Fish and Wildlife Service officials receive a request for consultation from another Federal agency, it is required that they evaluate an activity's impact within 60 days.

At that time, the Service can determine that the activity will have no impact on the species, or it will have a harmful effect, or that in fact it may benefit the species. The Service can request that further studies be undertaken in order for it to render its final biological opinion. If negotiations had been undertaken in good faith by construction agencies. Those projects which have come under dispute would probably have been resolved long ago—out of court, out of Congress.

We know that these hearings will result in a better understanding by the committee of the difficulties and complexities involved in the administration of this act. We would like to reaffirm our commitment to the purpose of the Endangered Species Act: Saving endangered species from extinction through the forthright, expeditious and well-intentioned implementation of all sections of this legislation.

Thank you, Mr. Chairman.

Mr. LEGGETT. Well, you pointed out the benefits of the EIS procedure, which looks at the impact of Federal actions on designated species. Of course, we have already suggested that perhaps we might also consider the converse of that, where we consider designating species in habitat, and their impact on other Federal, and perhaps even State, activities.

Dr. BERGER. I think if I understand what you are saying, Dr. Leopold had an appropriate statement: If you build a playground and you decide you want to change that use, you can tear up the playground and you can put grass back, or convert it to another

use, but once you destroy a species, it is irreversible. It cannot be brought back simply by the action of man. It is a final decision.

Mr. LEGGETT. Mr. Garrett.

Mr. GARRETT. I am Tom Garrett, legislative coordinator for the Defenders of Wildlife, a national organization dedicated to the defense of wildlife and wildlife habitat.

With your sufferance, I would like to give a little broader testimony than my colleagues. At least it ought to be interesting.

Mr. LEGGETT. Try it.

Mr. GARRETT. If you find me rambling on, I know that you will remind me of it, and I will cut back a bit.

Mr. LEGGETT. How many pages?

Mr. GARRETT. Let us read a couple, and submit those.

Mr. LEGGETT. All right.

Mr. GARRETT. Mr. Chairman, The Pleistocene epoch—

Mr. LEGGETT. Do we have to go back quite that far?

Mr. GARRETT. We do not want to focus in too narrowly.

Mr. LEGGETT. Does somebody have some music they can play?

Mr. GARRETT. Beginning about 3 million years ago, produced the greatest flowering of the age of mammals. Sixty thousand years ago, however, in Africa, there occurred the first of a series of wholesale extinctions. About 40 percent of the larger mammals on the continent became extinct within a few thousand years.

In Europe, from 30,000 to about 10,000 years ago a similar wave of extinction carried to oblivion about half of the larger mammals: Such as Merck's rhino, the mammoth and the straight tusker, the steppe bison and the Irish elk to name a few.

Then in North America, with the end of the great Wisconsinian glaciation, 10 to 13,000 years ago, there occurred an episode of catastrophic mass death that swept from the Earth 70 percent of the genera of large North American mammals: The American mastodon, the giant beaver, the giant ground sloths, new world camels and horses, the dire wolf, *Felis atrox* the plains lion.

The sudden mass extinctions, affecting in most cases the largest and the strongest mammals, adapted to climatic vicissitudes and free of natural enemies, occurred in each case with the emergence or invasion of advanced human hunting cultures. All evidence points to those hunting cultures as the major, and probably the sole agent of extinction.

As human hunting cultures reached South America there passed, along with the armored glyptodonts and the giant armadillo, the last ground sloths and the last new world horses. The arrival of human hunting cultures in Australia resulted in the extinction of 40 percent of the larger marsupials, including Diprotodont, a wombat the size of a rhino.

The human invasion of Madagascar 1,000 years ago resulted in the extinction of about 40 percent of the species of lemurs including *Megaladapus* who was as large or larger than a gorilla and all of the other large diurnal lemurs; a pigmy hippo, a giant fossa, and the elephant bird which nested in great numbers on the coastal plains, and whose eggs—the largest known from any bird—may still be found. With the colonization of New Zealand by the Maori about 800 A.D., there passed from existence 22 species of moas, giant ground birds which had assumed the terrestrial niche nor-

mally occupied by mammals. Of this order, only the little kiwi, which survived by its insignificance and fossorial habits, is extant today.

It would appear, following the extinction of the more vulnerable species, that precivilized hunting cultures may have come into a liberation with their environments. However, with the advent of civilization, there was unleashed against the already impoverished postpleistocene fauna a new and more terrible and implacable assault, compressed in time, concentrated in ferocity.

In 300 years, an evolutionary flick of an eyelash, an entire suborder of unique and magnificent mammals, the great baleen whales, have been brought within sight of biological extinction by human whalers. Most of this has occurred within our lifetimes. Within a century, our forefathers destroyed the vast flights of the passenger pigeon. In half a century, following the extinction of the eastern bison, the plains bison was pushed as a deliberate policy of the U.S. military bent on subjugating Indians to the lip of the abyss of extinction. Within 20 years from its first encounter with humans, the Stellar sea cow was extinct.

It was through the efforts of a small group of Americans led by Dr. William Horniday at the close of the last century, that the plains bison was spared extinction. Since that time there has been what a modern media type might call a "spreading backlash" against the destruction of species. The National Bison Range was established in 1909. The Audubon Society, along with the redoubtable Dr. Horniday who set up Washington, D.C.'s first wildlife lobby, saved most of the "plume birds" from the millinery industry. Excess killing of most games birds and animals was gradually curbed, and depleted populations restored.

This trend in the United States was matched by trends in other nations. The restoration of the pronghorn in the Western United States in the 1920's and 1930's, for example, found its counterpart in the restoration during the same period of the Saiga antelope on the Soviet steppes.

Twelve years ago, after authorizing various pieces of legislation to succor individual species such as a 1958 bill to restore the Hawaiian goose, or Nene, this committee reported out our Nation's first "across the board" legislation to protect endangered species. It has twice strengthened this legislation. The Endangered Species Act of 1973 is one of the strongest and most comprehensive pieces of wildlife legislation ever written.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora negotiated under the mandate of the 1969 act stands as a tribute to the foresight and tenacity of Mr. Dingell, to the present chairman and other members of this committee, who not only wrote in the requirement of negotiating such a convention, but doggedly insisted that it be carried out.

Since this committee began its work on endangered species, no less than 42 nations have joined the United States in passing legislation to protect endangered species, and are now parties to the international convention. An increased recognition of the gravity of the plight of endangered wildlife appears to be seeping into the awareness of numerous governments.

Despite these seeming successes, Mr. Chairman, for those of us who have devoted a good part of our adult lives toward saving wildlife, this is a painful time.

The past decade has beyond doubt been the most disastrous in the history of the planet. The next promises to be worse. There may well be more extinctions in the next 30 years than in the last 30,000.

Today, not only individual species, but the fauna and flora of entire regions are subject to destruction, indeed are being destroyed, implacably, often irrevocably, by deforestation, desertification, laterization, erosion, urbanization, not over a course of centuries, but year by year, at a terrifying rate.

In a few more years—I would call your attention to the magazine of Madagascar that I dropped off—if the present trend continues, practically all of the unique fauna of Madagascar, including the 28 remaining species of lemurs, and most of the native flora will be gone forever. Even greater disasters are gathering in Southeast Asia and in Amazonia.

In the meantime, direct pressure on wildlife is everywhere mounting, reaching a state of organized extermination in parts of Africa, and to a lesser extent Southeast Asia and northern South America. Animals such as the black rhinoceros or Grevy's zebra, which seemed secure a few years ago, are in imminent danger of extinction through poaching.

Despite a few exemplary successes, such as the restoration of the American alligator, the U.S. endangered species program has had little overall effect on this situation. The act remains, in fact, virtually unfunded and largely unenforced. The Carter administration, for all its rhetoric has, if anything, cut back on the endangered species program in "real dollars." Our annual budget for endangered species would have kept the Vietnam war going for only a few hours. It would last the pork-barrel agencies in their own war on the American landscape only a little longer.

Mr. LEGGETT. Civilization causes this galloping extermination of endangered species. Our aid program really is designed to promote civilization in Madagascar and other related areas.

Mr. GARRETT. Of course. We——

Mr. LEGGETT. One can make an argument that the aid program ought to be terminated.

Mr. GARRETT. Mr. Chairman, probably the chief reason why species are becoming endangered throughout the world is desertification of—destruction of forests and—desert form, where tropical forests are destroyed. But the biggest single reason why wildlife is being endangered is that forests are being destroyed. And when you destroy a forest, especially in montaine forest—certainly a lowland forest as well—you ruin the watershed. You are even in some danger of disrupting the respiratory systems of the planet and essentially depleting its oxygen supply.

When you destroy a forest, especially in a tropical area, you get erosion—and you get sterility in determination of agricultural potential, to the extent there was any potential.

In good time, you get a social and economic disaster as well as an ecologic disaster, because they cannot really be separated. And when you protect wildlife, you almost, by definition, tend to protect

upland forests with all of the benefits that accrue from protecting the upland forests.

I think that one of the chief indictments that can be made against our aid program is its ecological blindness. And oftentimes, it has caused a lot more harm than it does good. A small example was the establishment of a commercial—under AID financing—turtle processing facility on the mosquito coast of Nicaragua, in 1970. Indians had lived off sea turtles—and the hardwood forests were cut by the robber barons—when the forests were gone, they turned back to sea turtles. It took about 6 years to deplete the green sea turtle population that came along the coast of Nicaragua.

The turtles were gone and the population had nothing to fall back on. And their situation is now far worse than it ever has been before. And until the turtles restore themselves, they do not have anything to fall back on, because their fundamental resources have been destroyed, and destroyed in just a very few years.

And also that is one small example of misguided AID program. Because previously the nomads could not—when the plains dried up, the nomads had to move their flocks off the plains, because they relied on ground water. When AID, and various agencies came in and drilled over 2,000 wells, then the nomads were able to keep their flocks in the desert, during dry years, during dry seasons, kept them in numbers, and it took a few years to reduce what had been a fairly decent piece of range—from the standpoint of an Wyoming rancher, anyway.

They have retained a fairly decent capacity, a capacity of well up to 20 cows per square mile, and still have grass during the time when the area around looks like the surface of the moon. Most of it still does.

Mr. LEGGETT. I think it is a marginal project, as you say, and expensive.

Mr. GARRETT. Well, let me say that it is at this juncture—I will not go into some of the misdeeds of our Department of the Interior, unless I am asked to do so.

It is at this juncture, with so much dependent upon the United States activating its all but stillborn endangered species program, that the act has come under attack in the Senate Public Works Committee. The Senate amendment is aimed at section 7 which has been characterized as the “heart” of the act.

The first part of section 7, as you know, imposes a positive duty on U.S. agencies to use existing programs to carry out purposes of the act, and to carry out “conservation programs” in consultation with the Secretary. This requirement has been sedulously ignored and is evidently unenforceable.

The second portion of section 7 departs from past wildlife law which simply regulated trade and taking, by acknowledging that no species can or does exist in isolation, and that it is perfectly academic whether or not an animal is deliberately molested if its habitat is destroyed.

The obscure species which have figured in several recent controversies, are of course, part and parcel of very specific environments. Their disappearance, almost invariably, signals the functional end of the habitat in which they lived in whatever region, in whatever river system comprised their range. Their disappearance

signals the end perhaps of free flowing, unpolluted water on a river, the end of inland marshes in a region. The end of the snail darter, for example, would mean the end of any large, free flowing stretch of river in the entire Tennessee system, the end of a running water fishery, the end of 17,000 acres of prime bottom farmland and additional thousands of acres of forest and pasture. It would mean the end of the bond that humans had with that land before it was wrenched forcibly from them, including severance ties of the Cherokee people with ancestral sites. There would be far, far more that is absolutely irreplaceable and unique ending forever, foreclosed forever, than the little snail darter.

Section 7 acts, albeit sporadically, as an enforcer of biotic diversity. The social value of preserving biotic diversity, of retaining certain natural, or at least ecologically functional islands in areas where landscape has been largely developed and destroyed, should be obvious enough. Certainly obvious to the folks on the Senate and House side who wrote the legislation, because you can see that in the testimony.

However, while the so-called obscure species, such as darters and molluscs, have bemused the press and served as the pretext for the Senate amendment, the fact is the most of the potential controversies which are now simmering under section 7 involve not obscure species, but birds and mammals well known and cherished by the public. These involve, among others, grizzly bears, Asian elephants, southern sea otters—the habitat of that species, the whooping crane—the two dams the Narrows Dam and Greyrocks dam on the Laramie River in southern Wyoming, both affecting their stopover habitat. And you also have RAA refusing to consult in the motif of the TVA—whooping cranes, Florida everglades kites, bachmans warblers, Mississippi sandhill cranes, florida manatees, bowhead whales, laysan monk seals.

The Senate amendment applies to these species as much as to the snail darter. The interests pushing for amendment no more care what happens to these species than they care what happens to the snail darter.

Most of the conflicts involving these species are doubtless resolvable if the agencies make good faith efforts to consult and to modify their projects and activities. But when you discover, find a development agency complying with a law, if they do not have to, it routinely—as are the requirements of the National Historic Preservation Act and Federal Relocation System Act is flouted more often than it is observed. You have TVA going in court right today, for failing to comply with the Clean Air Act. You have got the Bureau of Reclamation apparently in violation of the Boundary Waters Treaty, and under our international treaty obligations, you have got the bureau rolling over Indian treaty rights every chance it gets. You have the development agencies even ignoring the guidelines in their own laws.

It is hard to imagine, however, that most of the agencies would pass up an opportunity to shunt the decision to a committee where political pressures from vested interests can be focused.

The present act sets forth a firm national policy to prevent the extinction of species, and makes it clear that no agency is exempt from the requirements of that policy. The Senate amendment ex-

cuses a class of citizens, namely the promoters of pork-barrel projects, from what have heretofore been the act's requirements. I do not say that the act does not require some clarifying requirements.

For instance, in—they thought they could not improve the habitat of the endangered species without coming in conflict with the act, for example.

If that amendment should pass, we will no longer have a national policy to prevent the extinction of endangered species. That policy will have died in infancy. We will have national policy to prevent such extinction only as long as it does not interfere with development. The Congress will have confirmed to the American public and to other nations that it cares less about ethics than about money and power; that is, it is all very well to talk about principle, but it is not all right to actually base policy on principle if it "stands in the way of progress."

I cannot imagine that this committee which wrote and developed the act, which is now making the effort to determine precisely what the facts attending the controversy actually are, will permit this to occur.

Thank you, Mr. Chairman.

Mr. LEGGETT. The committee that would pass the amendment, certainly has a reputation to maintain. Well, I was in Somalia one time and that is a very undeveloped area. I certainly would say that this theory of protecting endangered species does catch on. It is right. It is very stimulating to hear the Somalians talk about the protection which they—are providing for some of their special endangered animals.

I am not necessarily enamored with the Senate amendments. I understand what our colleague from Iowa is trying to do. And so the question is whether you do that, something else, or nothing. This is what we are looking at, without anything particularly before the subcommittee at this point.

Who is going to talk about the Indiana bat?

STATEMENT OF MICHAEL ZAGATA

Dr. ZAGATA. I can do that. First, however, I would like to give a summary of my statement.

Mr. LEGGETT. Why do we not go ahead and do that.

Mrs. STEVENS. Could I be excused? I have to preside at a meeting shortly.

Mr. LEGGETT. You are excused. Anybody have any questions? That will not keep you. It was very nice to have you here.

Dr. ZAGATA. Mr. Chairman, I would like to start out a million years later than Tom did, and submit the full statement in the record. I ask that, if you have time, you read it, because I have tried to give you some—background information on the principles involved.

Mr. LEGGETT. You are testifying on behalf of the Audubon Society?

Dr. ZAGATA. Yes; I am.

Mr. Chairman, members of the subcommittee, thank you for the opportunity to testify before you on the Endangered Species Act of 1973.

I am Dr. Michael Zagata, Director of Federal Relations for the National Audubon Society, a non-profit conservation organization with about 400,000 members organized into 411 chapters through-

out these United States. The National Audubon Society is one of the oldest, largest and most experienced membership organizations devoted to conservation in general, and specifically to the protection and enhancement of wildlife populations and the ecosystems upon which those populations depend for their survival.

The National Audubon Society has previously testified in support of the philosophy and concepts embodied in the Endangered Species Acts of 1966, 1969, and 1973. I am here again today to defend and support the act and the following purposes for which it was written: 1. To provide a means whereby ecosystems upon which endangered species and threatened species may be conserved; and 2. to provide a program for the conservation of such endangered species and threatened species.

It is difficult to fault the farsighted conservation ethic displayed by Congress in drafting and passing the act (passed the House by a 390-12 vote). Your action in passing this legislation echoed the sentiment of the American people, who are highly cognizant of the potential losses associated with the knowing demise of a species. Indeed, Leopold expressed the rationale for this type of legislation in 1949 when he wrote:

Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question of whether a still higher "standard of living" is worth its cost in things natural, wild, and free. For us in the minority (no longer true) the opportunity to see geese is more important than television, and the chance to see a pasque flower is a right as inalienable as free speech.

It is a new thing for one species to mourn the death of another species or to take measures to prevent that death. Leopold stated this succinctly when he wrote:

The Cro-Magnon who slew the last Mammoth thought only of steaks * * * but we who have lost our (Passenger) pigeons mourn the loss. Had the funeral been ours, the pigeons would hardly have mourned us.

From a practical standpoint, the Endangered Species Act of 1973 was written in recognition of the following facts: 1. Various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation; 2. other species of fish, wildlife, and plants have been so depleted in numbers that they are in danger of or threatened with extinction; and 3. these species of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people.

In recognizing the values of endangered species, Congress, for the first time, established a system by which those species could be weighed against other valued resources during evaluations made in compliance with the National Environmental Policy Act of 1969 (NEPA) and the Fish and Wildlife Coordination Act of 1934 (FWCA). Indeed, some of the current dilemmas involving the Endangered Species Act of 1973 might have been avoided if the Water Resources Council, established under the Water Pollution Control Act of 1972 (Public Law 92-500) had set and adhered to vigorous, fair "practices and standards"; and the FWCA and NEPA had initially been complied with (TVA is exempt from FWCA).

It is vital to our well being that Congress has recognized that these often inconspicuous and, with our present knowledge, seemingly valueless plants and animals, and their associated habitats, do have value. In our society, which historically has had a highly exploitive relationship with nature, protection is not generally afforded species and/or communities lacking an economic value or the known potential of having an economic value.

This is unfortunate but true. I say unfortunate because this historic lack of concern for these "valueless" resources demonstrates both the lack of an ecological ethic and of foresight.

We are only now recognizing, as the coal miners did years ago when they took a canary with them into the mines, that many of the "innocuous" plants and animals do have or may someday have a value to mankind. We cannot fault these plants and animals for our current limitations in knowledge about their potential values. Who would have fought to save the mold *Penicillium* from extinction in the 1700's? If someone had risen in defense of this mold, they would have been labeled a quack—or worse. Who among us knew of the value lichen communities would provide by indicating various types of air pollutants (dust, sulfur dioxide)? We are only today discovering that the honey of honey bees may be used to monitor the level of heavy metals in the environment.

Besides the potential health benefits associated with plants and animals, there may be unknown economic benefits as well. The jojoba bean of our western deserts is an example. It was considered a noxious weed and treated as such until research results demonstrated that its oil had properties similar to those of the threatened sperm whale. Now the jojoba bean is receiving a good deal of positive attention.

In general, the animals threatened with extinction are not those that compose the early stages of ecological succession, often undergo population eruptions and are regarded as weeds or pests. Instead, they tend to occupy more stable communities, have lower biotic potentials, require rather narrow, specific habitat conditions and, in the case of animals, occupy the upper rungs of the food-chain ladder. It is for these very reasons that they are so valuable to man as indicators of the impacts of various forms of natural and man-induced environmental perturbations. The bald eagle, for example, helped demonstrate to us how persistent pesticides passed through the food-chain and became magnified in concentration as they moved from link to link. Our monitoring program indicated that aquatic levels were well within the "safe" range. The eagle proved otherwise. Who knows what lessons we may learn from two of our latest contenders for extinction—the snail darter and Furbish's lousewort? Both are known to have rather specific habitat requirements and thus serve as indicators of slight ecological change.

From a selfish standpoint, it is to mankind's benefit to save representative ecosystems because the communities within them may contain a plant or animal of unknown value. We may recognize other values of a community and need "working" examples of it in order to reconstruct more. Only now do we recognize the role of wetlands in purifying our water, recharging the ground-water

table, buffering floods, et cetera. Do we know enough about these wetlands to begin to reconstruct them for man's benefit?

Over and above the health and economic justifications for protecting endangered plants and animals is the over-riding need for a conservation ethic. For such an ethic to be effective we must look at and value ecosystems and their associated species from more than a short-term economic or man-benefiting perspective. We must value those components of the land community because they are essential to its healthy and continued functioning. During his campaign, President Carter referred to our fish, wildlife, and plant resources by saying that they act as "an indicator of our environment" and that "when they have trouble surviving, we should seriously examine the quality of our environment." Congress has provided the Nation with a tool to facilitate that type of examination and we commend you for it.

SECTION 7

In supporting the act, we wish to make special reference to section 7 which states, in part, that all Federal agencies and departments shall:

Utilize their authorities in furtherance of the purposes of this act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction on modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.

This section is an integral part of the act and in harmony with section 2(c) findings which state:

It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this act.

The temporizing phrases of earlier Endangered Species Acts (1966, 1969) which bound agencies to conserve protected species only "insofar as is practicable given the primary purposes of such agencies" have been eliminated. Congress was emphatic!

The National Audubon Society strongly endorses the existing mechanism for avoiding conflict with the act and for resolving conflicts if and when they arise. We feel that the agencies involved should, in demonstrating good faith in attempting to comply with the act, be able to resolve their differences in consultation leading to research, design review, and modifications in process, design, location, and timing which reconcile the competing interests.

If not, an agency may, at its discretion, proceed with an action that appears to violate the law. At this point, the judicial process may be invoked. Congress gave explicit authority in the act to any person to file suit to enforce provisions of the act. The courts, in hearing a case, may issue whatever order is necessary to force compliance with the law, including project modification or a moratorium.

If, after the courts have reviewed the case, no satisfactory solution can be reached, then Congress must be the final decision-maker. We feel that if Congress exercised its authority and judgment and called for a vigorous and thorough review of any project

they are called upon to adjudicate, as it has done with Tellico, that the number of such cases would be minimal. Such a review should evaluate a project's economic and social impacts, its environmental impacts over and above any effects on endangered species, and its overall benefits.

Tellico is a good case in point. It is the first project to be in violation of the Endangered Species Act that has reached Congress. To determine why this occurred, let us examine Tellico's history with regard to NEPA. NEPA requires all Federal agencies, before taking major actions, to consider alternative actions, including actions which can only be accomplished by other Federal agencies. In good faith, an agency should take a look at the possible consequences of actions they are about to take and examine how they might impact on the Nation's interest. Each major project is to be reviewed in terms of benefits and costs, project alternatives, and environmental impacts on the species, including mitigation. It was the absence of these procedures for Tellico under NEPA, owing to the protracted case of the TVA controversy, that has resulted in Tellico being essentially an Endangered Species Act case and not a NEPA case. In other words, the fact that TVA has demonstrated disdain for NEPA and is exempt from the FWCA has put Congress in a position of having to consider amending an act it so overwhelmingly supported. This demonstrates agency inflexibility rather than statutory inflexibility. Because the TVA continued to pursue a program which would eliminate the snail darter despite requests from Interior, from the Governor and from conservation organizations, the Audubon Council of Tennessee joined as coplaintiffs with the Endangered Species Committee and the Southeastern Association of Biologists in litigation against TVA. The result was a ruling by the Sixth Circuit Court in Cincinnati halting the Tellico project until an administrative or congressional ruling occurs.

In attempting to circumvent the issue of the dam's impact on the snail darter and the river valley, TVA is pursuing a transplant program in the Hiawasse River. It is important to note that the act offers protection to the "endangered species in their natural habitat" and therefore prohibits the destruction of critical habitat as well as of the species themselves (16 U.S.C. 1536). This point is crucial when considering the use of transplantation as a mitigating measure. Merely accomplishing a successful transplant to another area does not satisfy the requirements of the act. If successful over a protracted time and a wide range, however, a transplant program could enable the Secretary to determine that the species in question is no longer threatened or endangered.

The most difficult decision to be made in unresolved cases is whether or not the project's values exceed the values of a species, including its esthetic value. When referring to the demise of the passenger pigeon, Leopold eloquently expressed his concern for its loss:

There will always be pigeons in books and in museums, but these are effigies and images, dead to all hardships and to all delights. Book-pigeons cannot dive out of a cloud to make the deer run for cover, or clap their wings in thunderous applause of mast-laden woods. Book-pigeons cannot breakfast on new-mown wheat in Minnesota and dine on blueberries in Canada. They know no urge of seasons; they feel no kiss of Sun, no lash of wind and weather. They live forever but not living at all.

In summary, Mr. Chairman, the National Audubon Society supports the Endangered Species Act as written and would strongly oppose any amendment to weaken it. We believe that man has the responsibility to take every reasonable means to insure that his actions do not result in the extinction of any plant or animal. We would like to see increased funding to implement all sections of the act (especially section 6) and to, as President Carter requested in his 1977 environmental message, identify all critical habitat. Early identification of critical habitat would facilitate agency planning and the consultation process.

Overall, the agencies have done well in light of the funds available to them. We would hope that the appropriation of \$9 million to the TVA and other agencies, to transplant endangered species, is a demonstration of commitment to support and not subvert the act. It is hard, however, to conceive of this amount of money being appropriated for a few projects when the National Marine Fisheries Service has been operating its entire endangered species program on a budget of about \$300,000 per year.

In our testimony we have alluded to various kinds of values associated or potentially associated with endangered species and their habitats. The key value that is approached by this act is that of an ethic for the land and its associated resources. If I might, I would like to once more quote the late Dr. Aldo Leopold:

The "key-log" which must be removed to release the evolutionary process for an ethic is simply this: Quit thinking about decent land-use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.

Thank you, Mr. Chairman, for this opportunity to testify.

Mr. LEGGETT. Thank you, very much, Dr. Zagata. Do you have any words on that Indiana bat case?

Dr. ZAGATA. I am not certain where it stands at present, because they have discovered more bats. But I think it illustrates one very important point.

The Indiana bat in that area was virtually unknown, especially in terms of its habitat. The fact that attention was focused on the bat has led a great deal of research to be devoted for ascertaining the biological requirements of the bat and its habitat.

We are now beginning to find Indiana bats in places we did not know they existed. Depending on the amount of difficulty and the location of discovery, it may be that that area is not indeed a critical habitat, because there may be enough habitat so that the loss of that may not constitute a major threat to the Indiana bat. I am not certain at this point where that stands, because I have not talked with the Fish and Wildlife Service, in about a year, on the Indiana bat.

Dr. BERGER. It is my understanding that in the Indiana bat case the court decided in favor of the project, deciding that the area of the project would impact only a relatively small portion of the bat's range. Therefore the court decided in favor of the project.

However, the project later was stopped because it couldn't stand up to a rigorous benefit-cost analysis. That was the reason the project was stopped. But I understand now that Congress is consid-

ering reauthorizing the project, or refunding it. If this happens I doubt that it would be stopped, or an attempt made to stop it on endangered species grounds again.

Mr. LEGGETT. So, you indicate that we are really buying our way out of the sandhill crane confrontation rather modestly.

The other project is moot for other reasons, and the Tellico project is still a conversation piece.

Dr. BERGER. I think it is much too early in the history of the act to go about changing it, on the basis of speculation.

Mr. LEGGETT. How many other situations do we have, though, like the Marine Corps, where they have apparently shut down part of their base for the redheaded woodpecker.

Dr. ZAGATA. I would hope that the Congressmen testifying with regard to the red-cockaded woodpecker would provide the committee with an amount of acreage affected.

Mr. LEGGETT. We are going to bring the Marine Corps in here.

Dr. ZAGATA. That woodpecker situation is not that severe, at least that is what I have been able to find out. It is very difficult to get that kind of information from the military. For example, they can go in, and drain a salt marsh and have a sanitary landfill the next day, and neither you nor I would know about it and no EIS would be filed.

Our military lands constitute about 26 million acres of land, and I cannot imagine that setting aside some small habitat for the red-cockaded woodpecker is going to seriously impair our ability to maintain military strength.

Mr. OBERSTAR. I want to thank the members of the panel for the historical—

Mr. LEGGETT. Prehistorical.

Mr. OBERSTAR. I stand corrected. Historical and prehistorical background—which does help put all these issues in perspective. However, the testimony has not come to grips with what I consider to be the key elements in this continuing controversy.

First, at what point in the development process could consultation and mitigation have avoided confrontation on projects such as Tellico Dam and the highway which interfered with the sandhill cranes? Would proper consultation and mitigation have made it at all possible to avoid the confrontation?

Second, is there a mechanism within the framework of the existing law to mediate apparently irreconcilable conflicts?

Dr. ZAGATA. Mr. Oberstar, with regard to the first part of your question—I think if you look at the problems that have arisen to date, they have arisen because of projects that were initiated prior to the enactment of the Endangered Species Act, or the identification of the species.

Mr. OBERSTAR. I sense that. In most of these cases the projects were already initiated, or already in the construction stage, before passage of the act.

Dr. ZAGATA. That is the reason that we are very concerned about an amendment. If indeed we can roll the endangered species process into the NEPA process, it will strengthen the act and help to avoid conflicts like we see with Tellico.

You are proposing to amend the Fish and Wildlife Coordination Act. If that is done properly, we should no longer run headon into

confrontations with any endangered species midway through the project. I do not think you want those conflicts, and neither does the Audubon Society. The conservation community wants, as the Fish and Wildlife Coordination Act stipulates, Fish and Wildlife to be given equal consideration during the planning stages of the project.

If you have a situation where TVA, SCS, and Nuclear Regulatory Commission projects are exempt from the Coordination Act, you are not getting that planning at the early stages of the project, and I do not think the way to avoid conflicts is to amend the Endangered Species Act. I think it is to strengthen the other acts, for example, the Fish and Wildlife Coordination Act and NEPA.

Mr. OBERSTAR. Can you distinguish between the operation of the act for projects initiated at whatever phase, before, and those initiated after passage of the act?

Is there a better record of avoiding confrontation for those initiated after its enactment?

Dr. ZAGATA. I do not know if there have been any confrontations with modern—with more recent projects. The only one irresolvable conflict is the one facing us with Tellico. And if we look at the Tellico case, Congress called for vigorous review of the project by the GAO and found that it did not fly, on the basis of its own merits. So again, it is not an endangered species issue that may lead to the demise of that dam.

It appears now that it should not be constructed. The little fish was used as a tool by the press to discredit the act.

Mr. OBERSTAR. There is the problem. The entire act bears some disrepute, because the affect of its implementation has been to stop the project.

Now we are faced with this problem in legislative form.

Dr. ZAGATA. Anytime any piece of legislation affects an interest group negatively, it is going to cause controversy, be it the snail darter, or be it anything else. If that controversy is strong enough, it is going to get the attention of Congress.

Mr. OBERSTAR. I realize that the principal witness on this issue, Dr. Plater, is not here.

Nonetheless, had this been a project initiated after the passage of the act, is there any way that that headon confrontation could have been avoided? Are there going to be other situations like Tellico that can be resolved within the framework of this act, without having to consider any amendment to it?

Dr. BERGER. I believe that it can. The I-10 controversy, with the sandhill cranes, is an example of a controversy—if you will—that happened after the act was passed.

Of course, the highway was planned generally along with the entire Interstate Highway System—many years ago. That particular section of the highway was not planned. The final environmental impact statement was not filed until 1975. The crane was listed in 1973; the act was passed in 1973.

The Federal Highway Administration noted in the impact statements the problems they would have with the crane. They knew of these things, yet they ignored their obligations under the Endangered Species Act for nearly 2 years.

Mr. OBERSTAR. Now, there is the problem of finding a suitable habitat for the species. That costs some money. The Fish and Wildlife Coordination Act does not apply to a highway project, it applies to water resources projects. So that could not come into play there.

Dr. BERGER. To my knowledge, there was no mitigation involved in this project.

Mr. OBERSTAR. If it had been, would it not have been possible to find some other habitat? Would there not have then been funds for mitigation and the confrontation avoided?

Dr. BERGER. You mean to move the cranes?

Mr. OBERSTAR. Yes.

Dr. BERGER. Relocating the cranes is not a reasonable solution. The answer was not to stop the highway or move the cranes. That was not the two sides of the coin. The highway was fine, with some minor alteration of the original design.

The critical habitat designation, I believe, is something like—100,000 acres; the proposed refuge, something on the order of 17 or 18,000 acres. What we asked for was that the borrow-ditches, from which road fill is taken, not be placed along the highway through the critical habitat, so as to drain that habitat.

We asked that the ditches be made elsewhere. This was to be accomplished for a portion of the roadbed area, according to the final impact statement. In addition, we asked that the highway interchange hookup either not be done—because it would mean the commercial development along that highway—or that that intersection be moved—there was another intersection 4 miles one way, and 6 miles the other way—or the land around, for a portion down that road, be purchased to prevent commercial development.

We were not opposed to the road going where it was. That took out maybe 300 acres of habitat. That was not the problem.

Mr. OBERSTAR. What was the problem?

Dr. BERGER. The Federal Highway Administration's unwillingness to consider any alternative other than to build that interchange, where they had planned it and exactly how they had it planned. That was the problem.

Dr. ZAGATA. That is the same problem we ran into with Tellico, with the Chairman of the Board saying "I have never lost a dam. I am not going to lose this one."

Dr. BERGER. In the three cases that have come to public attention, the construction agencies have been the problem. It has not been the inflexibility of the act. You know that the number of 4,500 is ringing in everybody's ears. It is the estimated number of unofficial consultations which have been held. In all but 3 of these cases the problems, or the projects where there are problems, have been resolved outside of court—in good faith talks. In the majority of cases, the project has gone forward and the endangered species has been protected.

Mr. OBERSTAR. Now you are responding to the second part of my question. Do we need some new mechanism, or is the act adequate to resolve potential problems as you say it is?

Dr. BERGER. It is adequate. We now have published regulations, under section 7, about how section 7 is to work. Let us give them a try.

Mr. OBERSTAR. My time has expired. Thank you for a very responsive answer.

Mr. LEGGETT. Before we adjourn, Mr. Forsythe?

Mr. FORSYTHE. Let me first—say that I think we have got a political problem. I think that in this situation, you have the committee 100 percent behind you. But I am concerned about the political question of what we are going to do to extend the authorization of the Endangered Species Act of 1973.

It is going to have to go to the floor this year; from where we stand now—and I have said this on a number of occasions—I would just be scared to get to the floor with an open rule on the endangered species authorization, because I think we could lose.

I am going to ask one question: Dr. Berger, was there a controversy about who was going to purchase land which held up the project on a nonenvironmental technicality?

Dr. BERGER. That is still the problem right now. We know what we need to do to remedy the situation. It is a matter of who is going to pay for it.

Mr. FORSYTHE. Isn't it true that your organization took up the issue and demanded that it had to be DOT, and not Interior that paid for the property?

Dr. BERGER. It is our strong feeling that it is not Interior's responsibility to purchase that land. Interior is going to purchase the refuge land. There is no question about that.

Mr. FORSYTHE. Land around the interchange?

Dr. BERGER. We think that those funds should come from the project. I understand that a bill has been introduced to provide those moneys outside of anybody's jurisdiction, just as a line item in the budget. And that gets around everybody's concern, I guess, that way.

Mr. FORSYTHE. But it has been one of the problems, and I hope that the issue resolved so that it can go ahead.

Was the appropriation made a special line item, because DOT and Interior could not get together?

Dr. BERGER. If these people had consulted, in good faith, at the start of this program, the highway administration could have requested in their budget the necessary funds in addition to the money they had asked for to condemn the land for the roadbed itself. They could have condemned a few additional acres.

Mr. FORSYTHE. Which is true. However, they did not. The other thing, of course, was that there were no really specific guidelines until March of this year. That has been one of the great problems in getting consultation going. Getting money even to buy critical habitat is getting to be more and more difficult, as we realize.

This committee, certainly present members, want to see that the act remains a strong act. I appreciate all your testimony, but you are selling the wrong people at this point because we don't control the purse strings.

Thank you, Mr. Chairman.

Mr. LEGGETT. Staff has some questions.

The Members have to go and answer the rollcall. We are going to allow staff to ask the questions which will be included in the record with the answers. At the expiration thereof, we will stand

adjourned until the 15th of June, at which time we will have various administration witnesses.

We have one last witness, Mr. Reveal.

Can you come back?

Mr. REVEAL. I am scheduled to leave on the 15th. I will be unable to.

Mr. LEGGETT. We have hearings on the 22d and 23d.

Mr. REVEAL. I have research to do.

Mr. LEGGETT. Well, you can present your statement, and it will be included in the record today. And you can expand on it with the staff, and join in the panel right now, if you would care to.

Why do you not come up here to the witness table.

[The statement follows:]

STATEMENT OF DR. JAMES L. REVEAL, ASSOCIATE PROFESSOR OF BOTANY,
UNIVERSITY OF MARYLAND, COLLEGE PARK, REPRESENTING THE
AMERICAN SOCIETY OF PLANT TAXONOMISTS AND THE BOTANICAL
SOCIETY OF AMERICA

Mr. Chairman:

Last week during hearings of this Subcommittee, I submitted a statement on the need for slight modification of Section 5 of the Endangered Species Act of 1973 to allow land acquisition for endangered and threatened species of plants in the same fashion as land may be obtained for animal species.

Today I would like to review other aspects of the Act relative to plants, and the current status of plant listing and protection as conceived by the United States Fish and Wildlife Service's Office of Endangered Species and International Affairs in the Department of the Interior.

I have had a long and productive association with the Office of Endangered Species, and while my comments may seem to be critical, it is hoped that my remarks will be taken as they are intended — helpful and constructive comments so that provisions of the Act may be carried out as they were proposed by Congress.

In these hearings, and in particular those conducted last week, the vast majority of comment dealt with one species, the snail darter. True, some comments were heard dealing with provisions of the Act, and with other animal species as well, but I do not recall a particular abundance of conversation devoted to plants.

This is somewhat surprising, Mr. Chairman, when you consider that there are just over 100 species of proposed endangered or threatened animal species in the United States, and something over 500 kinds throughout the world, while there are over 1800 endangered plants species in the United States and some 3200 endangered and threatened species in all for our nation, and some 25,000 different kinds of plants from throughout the world.

I call your attention to these figures so that we can appreciate the magnitude of numerical difference between the plant and animal problems we have so that when I next remark that the budget for the Office of Endangered

Species' plant programs is less than 5% of the agency's budget, you can also appreciate the difficulties we have in working with this agency on endangered and threatened plant species. I have tried to discover the agency's budget for its animal programs, but have been unable to do so, but in my own judgement, and it is just an estimation, I would say that perhaps 45% of the agency's budget is devoted to animals.

To say that plants have not been getting a fair share of the agency's annual budget would be an understatement. *

Still, does this mean that with so many plant species the problems with the Act will be multiplied many times over those for animals? The answer, simply, is no.

Of the some 760 proposed endangered species in the continental United States, they occur on less than 1% of the land surface, and about 65% of them already occur on public lands. In Hawaii, where nearly 50% of the native flora is endangered or threatened, the percent of land surface associated with these species is much higher, being something like 25% of the land surface of the Islands. It is important to recall that simply because a plant occurs on public lands, this does not automatically assure protection to the species nor its habitat.

Given these numbers, the question might reasonably be asked, does this mean that 1% of the land which harbor endangered and threatened plant species must never be touched or modified? The answer, again, is no.

Plants occur in a variety of habitats, from the hottest desert to the coldest of Arctic mountain slopes, from below sea level to near the summits of our highest mountains. Some are tall and majestic, others are so tiny that they must be seen with a microscope. Yet, Mr. Chairman, I dare say you and I are much the same in our attitude toward plants, and that we are not alone.

I can recall when growing up in the Sierra Nevada of California just north of Yosemite National Park my father, a United States Forest Service district ranger, pointing out to me a deer or bear or bird far off across grassy meadow, and my straining to see the animals. I was lucky as a child for occasionally he pointed out too an interesting plant, but I must admit they were not as exciting.

Plants do not move. They just sit there. You walk up to them, look at them, and it is all without much difficulty; one can rarely do the same with most animal species. Animals present a challenge in this regard, plants do not. And that is one reason why plants do not make for good press. Mr. Chairman, you can go further, and make more friends by siding with a large, beautiful bear, such as that which adorns the California state flag were it not extinct, than any plant on the endangered species list today threatened with extinction in your state.

As you no doubt are well aware, there are a multitude of animal and wildlife organizations here representing one or more of the some 500 animal species of concern in this world. As for the 25,000 plant species, there are only a few representatives.

The American Society of Plant Taxonomists and the Botanical Society of America are working closely with many other organizations in the United States, and in the world as a whole, on problems relating to endangered and threatened plant species. Most of these organizations are composed of amateur and professional plant experts interested in a particular kind of plant such as orchids, cacti and other succulents, and plants of horticultural or ornamental interest. The majority of these organizations are vitally concerned with the continued existence of endangered and threatened plant species in their native habitats, and none, to my knowledge, has as their official policy, a "zoo" concept whereby if a plant is in cultivation then it is alright for the native

populations to be rendered extinct.

All of us recognize that the genetic makeup of living organisms is vital to the survival of all living beings, and the native population is where one finds the greatest amount of genetic variation. To destroy that source of variation is to destroy the vitality of the species, and ultimately all life.

To this end, I wish to present to the Subcommittee a series of suggestions for minor modifications of the present Act so that plants might be more equally treated with animals.

Section 5

As I indicated in my remarks submitted last week, Section 5 of the Act should be amended to allow the Secretary of the Interior to acquire land on which endangered or threatened species of plant are found. This is a simple and minor adjustment to the present law. However, its implications ought to be briefly reviewed.

Biologically most endangered and threatened species of plants are organisms which, by their very nature, are rare and localized. Such species, which are often restricted endemics, are restricted in their potential range by a series of physical and biological factors which combine to interact on the survival of the species. Some plants may be rare and localized onto a unique edaphic site because the species cannot successfully compete with other, resident species in the area on more favorable sites. This is the case for many species in the western United States.

My own current research on this problem is providing some interesting results. In the Intermountain Region, or that area of high desert and isolated mountain ranges between the Sierra Nevada on the west and the Colorado Rocky Mountains on the east, I am finding that some plants are newly

evolved species, while others are ancient relicts which may be biologically on the verge of natural extinction. This aspect of population biology is one of the most interesting facets of my own endangered species work in the American West.

I am finding that some plants which are currently restricted to small, isolated populations on the valley floors, are in places which were covered with pluvial lakes just 10,000 years ago. These species are related to species which are found in montane or alpine situations in the adjacent mountain ranges, or in the high mountains of Colorado, Wyoming, Idaho, Oregon or California adjacent to the Intermountain Region. Much as the Galapagos Islands are a unique laboratory for biological speciation, so too are the desert floors of Nevada and western Utah proving to harbor new species of plants which have evolved within recent geologic time.

Likewise, my research is showing that some species in the Great Basin and on the northern edge of the Mojave Desert are probably isolated, disjunct populations of species which existed during the Pleistocene, but with the end of the last ice age, all but a few restricted populations have become extinct. It is interesting to note, Mr. Chairman, that the vegetation of the Mojave Desert of southeastern California some 25,000 to 15,000 years ago was then much like that found today in central Nevada, and that the vegetation of the Mojave Desert is a relatively new modification of what was present during the Late Pleistocene. What I am finding, it seems, is that as the temperatures warmed and the deserts started to form, the vegetation slowly migrated northward, but some populations remained, mostly on edaphically unique sites. These restricted populations either remained unchanged or evolved into new species differing from those which migrated, successfully, into what is now the Intermountain Region. Some species, of course, failed to adjust, and these are currently, and slowly, going extinct.

I trust, Mr. Chairman, you can appreciate the difference between a species that is naturally evolving into extinction due to the still changing environment of the western deserts, and a species that is being rendered extinct by a bulldozer, overgrazing, or off-road vehicle activities.

The real problem comes when a species, already suffering from natural pressures, is subjected to man-caused pressures as well. That, Mr. Chairman, is the problem all too many of our western species are suffering from.

There is little we can do to prevent the natural extinction of any species, that, after all, is what life is about. But we can prevent the aggravation of the process, and for those species which are threatened only with man-caused extinction, that too we can prevent.

As most endangered and threatened species already occur on public lands, no land acquisition will be necessary, just proper management. Too, we have found in portions of the West, that private land owners are particularly pleased to have on their lands a rare species, and will often provide far more protection than any governmental agency ever could. I suspect that this is generally true of most private land owners in the United States for they are often truly proud of their natural heritage and strive to protect and defend it from destruction. Thus, I do not see vast areas of land suddenly being required for the protection of endangered and threatened species of plants; rather, I see it as an infrequent event that will have to be used, from time to time, to provide adequate protection of a listed species.

The Secretary of the Interior must have the option for land acquisition for plants as he has for animals, and to this end, the American Society of Plant Taxonomists and the Botanical Society of America urge the following:

RECOMMENDATION: That Section 5 of the Endangered Species Act of 1973 be modified to allow land acquisition for both plants and animals on an equal basis.

Section 6

According to the Interior's Solicitor (as of March, 1977), the United States Fish and Wildlife Service cannot enter into cooperative agreements with the various states for plants because Section 6(c) states only "fish or wildlife." In my statement of last week I reviewed briefly the reasons why plants were largely ignored in the 1973 Act, and I shall not restate that here. Accordingly, cooperative state agreements are urgently needed for plant conservation much as we now have with animal conservation. That plants were simply forgotten in this section is obvious as the needs of the states, and of the plants, are no different than those of the animals. The American Society of Plant Taxonomists and the Botanical Society of America therefore wish to support the views expressed previously by the Department of the Interior, and request that plants be included under provisions of Section 6(c):

RECOMMENDATION: That the term "plant" be added, where appropriate, to Section 6(c) following the terms "fish or wildlife" or "fish and wildlife", and other portions of Section 6, as appropriate, so that cooperative programs with the states may be established for plant conservation on an equal basis with animal conservation.

Section 9

One of the most difficult aspects of the current Endangered Species Act for the botanical community is the problem with "take". The Act provides for prohibitions against taking endangered and threatened "fish and wildlife" but no such prohibition is extended to plants.

When Congress wrote this section of the Act, I do not believe they

fully understood the nature of their actions, and if the various comments in the Federal Register are any indication, I dare say the problems this has created for the Department of the Interior were not anticipated either. In general, I believe Congress envisioned "take" to apply to large, single individuals, such as a bear, an eagle, a fish, or a goose. The definition of "take" is defined as to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" and as one can see, such terms are really not intended for many plant species. The Federal Register of 26 September 1975 attempts to clarify what all this means, but the important point from my point of view, no matter the vocabulary used, plants are excluded from provisions of the Act in this section.

It has been suggested to the Subcommittee that plants be added to Section 9, but I am somewhat reluctant to concur with this opinion. When one reads the definitions of "harass" and "harm" in the Federal Register (40 FR 44416), one is left with the opinion that plants could hardly fit such terms. I am not certain what one would mean by interfering with a plant's "normal behavioral patterns which include; but are not limited to, breeding, feeding or sheltering." Does this mean that one cannot walk upon an endangered species? Does this apply to a grazing cow when an endangered plant is eaten? I am just not certain that aspects of this section, as now written and conceived, can be realistically applied to plants.

Plants were simply never considered, but then, neither were many animals either, especially those which are very small, very restricted, or have some type of unique or unusual biological relationship with some other type of organism. Too, I suspect, few people realized then that at certain times in the life cycles of many species, the taking of individuals will have no impact upon the future of the species.

This is one part of the Act where I would like to see some flexibility. What I would like to see is that the prohibition against taking individuals be made part of the overall assessment of any endangered species. Currently, agencies such as the United States Forest Service, the National Park Service, and the United States Fish and Wildlife Service are doing just that for plant species on the lands they administer. Some species are not subjected to any taking under any conditions, while others are at various periods of the life cycle. This type of individual consideration is biologically sound, and I urge this concept be applied to all organisms.

RECOMMENDATION: The concept of "take" be applied equally to plants and animals, and that appropriate portions of Section 9 be amended to this end. However, additionally, provisions should be added to Section 9 whereby provisions regarding taking of all organisms be based upon the biological nature of the species.

To carry out this recommendation, it is herewith proposed that when a species is listed that if it is necessary, prohibitions against taking be stated, otherwise individuals may be gathered. It is exceedingly important, Mr. Chairman, that you note that I said "individuals". In no way do I mean to imply that the habitat could be modified and the individuals taken with a bulldozer. The collecting, or picking, or gathering of individuals is one thing, the destruction of an organism's habitat is something totally different. Obviously too, I wish to stress that such acts of taking be done so as not to interfere with the survival of the species nor the interactions of the population. Collecting individuals of an annual species which may number in the thousands, albeit in a very small geographical area, will have no influence on the survival of the species. Likewise, the gathering of a few branches off an endangered species of tree which may number in the tens or twenties could be seriously endangering the species even more. Judgment and flexibility

are required here, and asked for.

Proposed Endangered and Threatened Plant Species

Mr. Chairman, I would now like to divorce myself from provisions of the Endangered Species Act specifically, and discuss a few other items relative to endangered species.

The national list of endangered and threatened species of plants, as developed by the Smithsonian Institution under provisions of Section 12 of the Act ("Report on endangered and threatened plant species of the United States," House Document 94-51: 1--200. 1975), and now recently revised independently by the Institution (Ayensu, E. S., & R. A. DeFilipps (eds.), Endangered and threatened plants of the United States. Smithsonian Institution and the World Wildlife Fund, Inc., Washington, D.C. 1978. 403 pp.), is a fairly good statement of the endangered and threatened species of the United States. These lists are not totally accurate, and already the 1978 publication is out-of-date, but they are the best summaries we have. The private work by Kartesz and Kartesz is excellent too (Kartesz, J. T., & R. Kartesz, The biota of North America, Part 1: Vascular plants, volume 1: Rare plants. 1977. Biota of North America Committee, Pittsburgh. 361 pp.), but it too is dated.

I can say this, Mr. Chairman, from just reviewing my own contributions and areas of responsibilities as a member of the Smithsonian's Endangered Species Committee, and from attending several workshops and meetings on endangered and threatened species in various parts of the western United States.

However, even with these admitted shortcomings, the latest list of endangered and threatened species, as edited by Dr. Edward S. Ayensu and Dr. Robert A. DeFilipps of the Smithsonian Institution, is the best listing

available.

Many agencies, one being the United States Forest Service, for example, have taken these lists and considered the species as listed. This policy is allowing the Forest Service to consider endangered and threatened plant species in their land-use planning and management programs, and this is a most rewarding aspect of our work to see such an agency as the Forest Service consider now, before listing by the Department of the Interior, those species of critical importance. Such cooperation as this is also being found with the National Park Service, some segments of the Bureau of Land Management, and perhaps other agencies as well of which I am not familiar. Other agencies, however, are not as enlightened, and some have refused to consider any curtailment of their activities until a species is listed; this is particularly true of some military agencies.

The American Society of Plant Taxonomists and the Botanical Society of America feel that it is important that all agencies which are required to prepare Environmental Impact Statements for the Council of Environmental Quality take into consideration those plants listed by the Smithsonian Institution in their statements.

RECOMMENDATION: That Congress, by act or resolution,
insure that the recommended list of endangered and threatened
plant species, as prepared by the Smithsonian Institution's
Endangered Species Committee, and published in 1978, be taken
into consideration in all Environmental Impact Statements until
such time as a species is listed or delisted.

Proposed Inter-agency Committee

In the recently passed Senate bill, a seven-member secretariat inter-agency committee will be established to grant exemptions from the Act if it

is found that a project is clearly more beneficial (I assume to man) than the continued existence of a species of plant or animal. If endangered species are to be protected from the actions of government, as stated by Congress and agreed to by the President when the Endangered Species Act was signed into law, this inter-agency committee will have to be carefully advised in its role. Individuals within government will have clearly mandated biases and limited options to express their opinions, and thus outside views must be obtained by the committee to aid its members in arriving at a reasonable judgment.

The American Society of Plant Taxonomists and the Botanical Society of America feel that this is a role they, along with other professional societies in biology, can be of help to the government. Accordingly we hereby request that a representative, from the appropriate scientific discipline, be appointed as an independent advisor to the committee as a whole.

RECOMMENDATION: That if the Senate proposal to establish a seven-member secretariat inter-agency committee to grant exemptions to the Endangered Species Act of 1973 is to be given approval by the House of Representatives, such approval should include provisions whereby a representative of the scientific community expert in the biology of the particular organism in question be included as a part of the deliberations, and that this expert be appointed to aid the inter-agency committee by the joint approval of the directors of the National Academy of Sciences and the American Institution of Biological Sciences.

Comments of Agencies Roles and the Endangered Species Act of 1973

Up to this point in my statement, I have concentrated on aspects of the Endangered Species Act. As this is an Oversight Hearing, it is appropriate

to remark on the administration of the Act by the various agencies responsible for it.

Unfortunately, plants are looked upon as something animals eat, and their value is not much beyond that. It must be noted at the onset that the Fish and Wildlife Service is trying hard to rid itself of old habits and traditions. I was once told that "Fish" referred to anything in the water that could be caught, fish or not, and that "Wildlife" referred to anything that could be shot. Having gone to Utah State University for part of my education, I can assure you that this attitude begins in school, and is strongly reinforced by university traditions too.

It is easy for me to see why something like 5% of the Endangered Species Office's budget is allocated for plants, while a much higher budget goes for animals. The Fish and Wildlife Service feels much more at home dealing with animals than with plants.

Still, Mr. Chairman, must plants continue to suffer from age old concepts and traditions? Why, for example, were the funds provided by Congress for the purpose of contract plant studies diverted? Some \$300,000 were to be spent, starting with the spring growing season, on all aspect of plant research and survey work; yet, only \$43,000 of that will be spent, in Oregon, and had the agency been able to recall the funds (which it tried), none would have been spent. This money was diverted to be used in Section 7 consultation, which Mr. Chairman is exceedingly important and absolutely vital, but why was the research and study aspect of the plant program gutted?

We are trying to list plants. We are currently dealing with over 1800 different species in the United States, and yet what little money that goes to the Fish and Wildlife Service for that purpose is not made available.

This cannot continue to happen.

Plants are being short-shifted not only by the Department of the Interior,

but by the Department of Agriculture as well. The Department's Animal and Plant Health Inspection Service is supposed to regulate import and export of plants covered by the Trade Convention. Why then does a known smuggler of South African cycads continue to bring cycads, which are covered by the Trade Convention, into the United States as little as a month ago? Why have nearly all import-export provisions of the Trade Convention, with regards to plants, been ignored by the Department of Agriculture? Could it be that they do not have the trained personnel to do the work?

Unfortunately the problems within the Department of Agriculture do not relate to "will", but to "means" by which the work can be done. Lack of trained professional plant taxonomists and plant inspection experts trained not in economic agricultural crops but in native plants are the kinds of people the Department needs to handle some of the provisions of the Trade Convention. The Department is now responsible for some 25,000 species of plants, and I can assure the Chairman that no one individual can know, by sight, all those plants, even a plant taxonomists. It is time that Congress help the Department by providing the necessary funding to insure that this work, wished by Congress, is carried out.

The Department of the Interior has set up "receiving stations" for confiscated animals taken as a result of investigations. No similar sites have been set up yet for plants, although various botanical gardens in the United States have expressed a willingness to do so. Of course, Agriculture, which is responsible for this would have to have a working plant program first, but the botanical community is willing to aid the Department if and when it can act.

In the meanwhile, plant smugglers continue to ignore the Trade Convention.

To this end, Mr. Chairman, the botanical community would like to urge that Congress, in the appropriate committees, review the budgets of both the

Department of the Interior and the Department of Agriculture and see if these budgets adequately reflect the needs of these departments in carrying out their mandates on endangered and threatened plant species. It would be unwise to restrict the ongoing animal programs, or curtail the several animal studies that are currently underway. Rather, we would suggest that the departments be given adequate funding to deal with plants, be given mid and upper level positions to hire trained, professional plant scientists, and urge that the departments treat plants equally with animals in all their programs.

Comments on the Botanical Community and the Endangered Species Act of 1973

Finally, Mr. Chairman, allow me to remark briefly on the work the botanical community is doing to support the various agencies of local, state and federal government, noting in particular the work of the American Society of Plant Taxonomists and the Botanical Society of America.

Until recently, the societies had no active concern with questions of the type we are reviewing here today. While individual members of the societies have always worked with agencies of government, members of Congress, and the White House, we are only now starting to be concerned as organizations. To be sure, one cannot call this an organized effort, but at least for endangered and threatened plant species, we are trying to work together, coordinate our efforts, avoid repetition, and generally provide helpful data.

I would like to share with the Subcommittee some of the various kinds of projects members of the societies are engaged in. Numerous individuals have contributed to the Smithsonian Institution's two lists which I have already cited. Even more have worked on a checklist of the vascular plants of North America north of Mexico [S. G. Shetler, & L. E. Skog (eds.), "A

provisional checklist of species for Flora North America (revised)." Monogr. Syst. Bot. 1: 1--199. 1978] which we are now developing into a hard-cover flora so that we may have, for the first time, some indication of just what species of vascular plants are in North America.

I am also providing a draft of a manuscript by Ms. Jane I. Lawyer, a Research Assistant at the New York Botanical Garden with the Cooperative Parks Study Unit, in which she summarizes the recent work by various persons, some members of the two societies which I represent today, on endangered and threatened species in the United States and Canada. This draft is currently under review and being updated, from time to time, prior to its publication in a forth coming symposium volume on Geographical Data Organization for Rare Plant Conservation. She is making it available to the Subcommittee, for publication in these proceedings, so that members of Congress might have a ready source of information on endangered and threatened plant species for their respective states.

At this time too, Mr. Chairman, I wish to provide to the Subcommittee another draft of a manuscript dealing with endangered and threatened plant species. First I wish to call your attention to a letter dated 25 May 1978 from three of the authors, and second I wish to note for the record that in a phone call on 26 May 1978, the fourth author, Dr. Bruce MacBryde, also responded to my request that we make available to the Subcommittee at this time a draft copy of our paper entitled "Proposed outline for status reports on threatened and endangered plant species." This paper, to be published in the fall of this year by the New York Botanical Garden in the same symposium volume alluded to above, is hereby made available to you and asked to be published with my remarks. I am also providing the letter from my co-authors, Henifin, Lawyer, and Morse for the record as well.

Of major concern to the members of the botanical community is the listing

of plant species as endangered or threatened. This process is complex, as it should be, for we feel that all available data on any given species must be accumulated and made available. We refuse to concede, as some animal people have, that if a mistake is made, the species can just be removed. Our plants do not move, and when a plant species is listed, consequences may follow which could reveal our hasty judgment and thus question all of our work.

I have heard some interesting stories of animals being listed simply because someone, on a single field trip could not find it. One animal was listed on data given to a particular person on a three by five card.

This may work for animal species, it does not for plant species. We demand more data, more exact information, and confirmation that a species is truly endangered or threatened.

Thanks to support from numerous agencies, notably the Forest Service, the National Park Service, the Bureau of Land Management, the Department of Energy, and the Department of Defense, and no doubt others as well, plus the National Science Foundation through its support of monographic and floristic research, plant taxonomists, ecologists, and other experts have compiled vast amounts of data on endangered and threatened species which we are now trying to summarize and put together into a working format for listing.

The listing process by the Office of Endangered Species requires a great deal of information about the organism, both for the actual listing and for the preparation of an Environmental Impact Assessment.

We know, as members of the botanical community, that this Office cannot put all of these data together. Fortunately, the various land management agencies recognize this too, and have supported research and information gathering projects since 1974. Such data cannot be gathered from an desk in Washington, D.C., it requires field work. To this end, members of the

botanical community have been very busy.

To aid in the summarization of these data, gathered from various sources by numerous individuals, we have written a "Status Report" format so that all data required by the Office of Endangered Species is covered. These status reports are already coming into the Washington office, and once published, we hope that more will be coming as well.

As you can see, Mr. Chairman, these data, as required and desired by the status report format, require field observations; botanical and biological knowledge; library and institution studies; evaluation and compilation of these data; and the expressing of these data in a logical and useful form.

The drafts of the list of current studies on rare and endangered plants, and the status report format, were made possible by financial support from the National Park Service. Many of the reports listed by Lawyer were supported by funds from state and federal agencies. Unfortunately, Mr. Chairman, I must add that these many agencies have largely taken funding from other programs to make these funds available for plant studies. Once again, the agencies recognize the need for the work, we recognize the need for the data, and we are will to provide it if we can do so. This requires funding.

Mr. Chairman, the American Society of Plant Taxonomy and the Botanical Society of America are working closely with the many agencies and branches of local, state and national government. We are providing, often free of charge, our expert help because we feel the cause justifies the time and energy. But we cannot do it alone. The agencies of government need your help and support.

Given the opportunity, we will do a good job on the plants which are unique in this nation so that when you, Mr. Chairman, walk the trail up French Creek Canyon east of Bishop and admire that yellow-flowered Indian paintbrush you may not know that it occurs no where else in the world but along that one stream bank, but at least Mr. Chairman, it will be there for you to enjoy.

That, Sir, is our goal.

10 February 1978

Guide to United States and Canadian Rare and Endangered
Plant Taxa Lists
(Draft by Jane I. Lawyer)

Part 1: United States Lists

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24 April 1978

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The need for such an outline was expressed at the workshop on endangered plant species convened by the American Society of Plant Taxonomists in East Lansing, Michigan, in August, 1977, and the first draft of this report was developed in November by an ad-hoc group at the symposium on Geographical Data Organization for Rare Plant Conservation, sponsored by the New York Botanical Garden and the U.S. National Park Service. The outline has subsequently been revised following extensive consultation with various people concerned with the ecology and conservation of rare plant species.

Although the scope of the outline may at first appear overwhelming, only those items marked with an asterisk (*) are regarded as minimally necessary for a plant species to be considered for listing by the Office of Endangered Species of the U.S. Fish and Wildlife Service. The nonasterisked items may be of particular importance in critical habitat studies as well as in developing management plans and recovery

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efforts. *If this additional information is available we strongly encourage its inclusion in the status report.* When information is not available or is not applicable to the taxon of interest, this should be indicated, and supplied later if possible. Obviously, decisions must be made on the priority of further information needed for a particular species, since there are very few (if any) species for which all these data items are known and there is rarely time, expertise, or money available to carry out the extensive field work needed for development of a fully documented status report.

This report outline was designed to provide synthetic information on the status of a species; such information can only come from a population-by-population assessment. Because details on populations may differ, and information may be gathered by different individuals, a population status report has also been developed and is appended to the general status report. These population status reports should be referred to as appropriate as documentation for the synthetic information on populations and site occurrences contained in the general status report. Information organized in this manner is also adapted for management decisions made on a population-by-population bases. If status reports are to be written on more than one taxon occurring in the same area, the geographical and ecological data need only be described once in the first status report and referenced in subsequent reports. The terminology here used is intended for flowering plants; appropriate modification should be made for reports on pteridophytes, gymnosperms, or other plants.

In preparing a status report, it is of utmost importance that all items of information be documented by reference to literature citations, museum specimens, field observations (observer, place, and date), experts consulted, or other sources of information. As a method for footnoting and documentation, we suggest all items of documentation be listed numerically and referred to by number in documenting information in the report. However, publicity-sensitive information should be reported only in the appendices (not intended for general distribution) rather than included in the text or documentation of the report, or if necessary, referenced indirectly and retained in the author's working files.

[Note: Examples of rare plant species' data organized according to this status report outline will be appended to the final draft of this outline.]

Requests for reprints may be directed to Cooperative Parks Study Unit, New York Botanical Garden, Bronx, New York 10458.

Proposed Outline for Status Reports on Threatened
and Endangered Plant Species
(Review Draft)

INFORMATION CATEGORIES

Heading

I. Species Information

- * 1. Classification and Nomenclature
 - 2. Present legal or other formal status
- * 3. Description
 - 4. Significance
- * 5. Geographic Distribution
 - 6. Habitat
 - 7. Population Biology
 - 8. Management Practices
- * 9. Current Ownership and Management Responsibility
- * 10. Evidence of Threats

II. Assessment and Recommendations

- * 11. Assessment of Trends for Populations and Habitats
 - 12. Priority of Listing
- * 13. Recommended Critical Habitat
 - 14. Conservation/Recovery Recommendations
 - 15. Recommended Distribution of Status Report
 - 16. Recommended Responsibility for Maintaining Status Report

III. Documentation

- * 17. Author
- * 18. Knowledgeable Persons
- * 19. Data Sources
- 20. Appendices

* Information regarded as *minimally necessary* for a plant species to be considered for listing by the Office of Endangered Species of the U.S. Fish and Wildlife Service.

I. Species Information

1. Classification and Nomenclature

A. Species or infraspecific taxon

- * 1. Scientific Binominal or trinominal
Include author(s).
- * 2. Bibliographic citation(s) of original nomenclatural publication(s).
- * 3. Pertinent synonym(s)
*Give frequently used alternative names, if any.
Include author(s) and place(s) of publication.*
- * 4. Common name(s), if any.
Give terms used by local residents or general public to refer to this taxon.

B. Plant Family with

- * 1. Scientific name
- * 2. Pertinent synonym(s)
Give frequently used alternative names, if any.
- * 3. Common name(s)
Give terms used by general public to refer to this family.

C. Major plant group

(Pteridophyte, gymnosperm, monocot, or dicot)

- * D. Current alternative taxonomic treatment(s)
Briefly review alternative taxonomic treatment(s), if any, dealing with the historical application of the name and concept of the taxon. Particularly consider recent revisions, monographs, floras, and checklists.

E. History of knowledge of taxon

Include information about original collection, rediscovery if assumed extirpated, etc.

2. Present legal or other formal status

A. International

1. Present designated or proposed legal protection or regulation.

Indicate whether listed or proposed for listing with the Convention on International Trade¹, Pan-American Union Treaty², or comparable status, and give date(s) designated or proposed.

2. Other formal status recommendations.

Indicate whether listed or proposed for listing with the IUCN Red Data Books³ or comparable status, and give year(s) status designated or proposed.

B. National

1. Present designated or proposed legal protection or regulation.

For example, indicate whether listed or proposed for listing as endangered or threatened under the U.S. Endangered Species Act of 1973.⁴ Give date(s) status designated or proposed in the Federal Register.⁵

2. Other formal status recommendations.

Indicate, for example, whether listed or proposed for national listing as endangered or threatened on the Smithsonian 1975 List⁶, the Smithsonian's 1978 List⁷, or recommended for national status in a state list (for example, the California Native Plant Society's list of nationally endangered or threatened California species).⁸ Give year(s) status designated or proposed.

C. State or equivalent

1. Present designated or proposed legal protection or regulation.

Indicate whether listed or proposed for state listing as threatened or endangered (or similar designation) under a state endangered species or similar law. Give date(s) status designated or proposed.

2. Other formal status recommendations.

Indicate, with reference, whether included in a state list without legal protection or regulation, such as McGregor's Rare Native Vascular Plants of Kansas.⁹

3. Description

A. General nontechnical description.

Give a brief description understandable to the nonspecialist.

* B. Technical description

C. Local field characters.

Emphasize differentiation from similar local species, repeated by population if appropriate. If possible include vegetative characters.

D. Identifying characteristics of material which is in interstate commerce; if applicable.

This information is necessary for taxa such as cacti or orchids which may need to be identified by law enforcement agents.

4. Significance of the taxon, as appropriate.

(Most of these topics are taken from Sec. 2(a)3 of the Endangered Species Act of 1973.)

A. Natural: ecological, evolutionary, etc.

Give a general statement of the biological significance of the taxon with particular attention to ecological and evolutionary history and importance, such as taxon with peculiar adaptations, or food plants of rare insects. Indicate if natural significance unknown.

B. Human: Agricultural, aesthetic, economical, educational, historical, horticultural, medicinal, recreational, scientific, etc.

Give a general statement of present or potential significance to humans such as food, forage, medicine, ornamental uses, erosion control, or livestock poisoning. Observations on significance of closely related taxa may also be pertinent here. Indicate if human significance unknown.

5. Geographical distribution

* A. Geographical Range

Summarize present and past range of the taxon.

B. Specific occurrence

Organize information by country, state, county (or equivalent), and U.S. Geological Survey quadrangle. For each occurrence include date last collected, observed, and/or reported and geographical coordinates of populations (where appropriate and not publicity-sensitive), preferably by latitude/longitude or else by range-township-section or Universal Transverse Mercator notation. List separately:

- * 1. *Populations currently or recently known extant*
- 2. *Populations known or assumed extirpated, with documentation*
- 3. *Sites where present status not known*
- 4. *Locations known or suspected to be erroneous reports, with explanations, e.g. misidentified specimens and localities.*
- 5. *Locations not yet investigated believed likely to support other possibly extant natural occurrences, with explanation.*

6. General habitat description, as appropriate, repeated by portion of range as necessary

A. Concise statement of general habitat

Give summary of the most important aspects of the information presented below, particularly those factors thought crucial to the taxon's survival.

B. Physical Characteristics

1. Climate

- a. *Regional (macroclimate) including such information as seasonal and daily ranges in temperature, daylength, precipitation, humidity, and wind velocity.*
- b. *Local (microclimate) including information on such factors as radiation, exposure to sun, water vapor pressure, and CO₂ concentration. (Indicate for each whether stable or unstable.)*
- c. *Local moisture regime*

2. Physiographic province by Fenneman¹⁰ or Hunt¹¹ system.
 3. Physiographic and topographic characteristics, such as relief, elevation range, geologic formations, slope, and aspect.
 4. Edaphic factors
*Soils: consider such characteristics as parent material, bedrock type, thickness of litter layer, depth to bedrock or impermeable pan, percentage of rock cover and percentage of rock throughout soil profile, structure and porosity, drainage and soil-water potential, nutrient status and availability, toxic elements, pH, redox potential, and SCS classification.*¹²
 5. Dependence on dynamic aspects of landforms, climate, physiography and sensitivity to environmental extremes, e.g. erosion, floods, gales or hurricanes, deflation or deposition of sand or soil, droughts, extreme frosts, sun exposure, and toxicities.
 6. Air and/or water quality requirements
 7. Other unusual physical features of habitat
- C. Biological characteristics
1. Vegetation physiognomy and community structure
 2. Vegetation type by Kuchler¹³, Bailey¹⁴, and/or Society of American Foresters¹⁵ system(s).
 3. Frequently associated species. (List other taxa commonly occurring with taxon of interest.)
 4. Dominance, frequency, and cover or basal area of species of interest in each community type where it occurs.
 5. Dependence on dynamic, periodic, and/or cyclic features of biotic associations and ecosystem, e.g. ecotones, soil ecology, tree falls, fire, and insect invasions.
 6. Successional phenomena including relation to canopy closure. For example, consider whether the plant is identified with a particular successional stage, or its tolerance for disturbance, invasion of roadsides, roadcuts, and growth on loose talus.

7. Population biology of species:

Summary of information on various populations, referenced to specific population status reports.

* A. General summary of population biology of the taxon.

B. Demography

- * 1. Number and geographical spacing of known populations (estimated if necessary) with estimate of number of individuals per population, if known.
2. General demographic details typical of the species (or infraspecific taxon).
 - a. Area
 - b. Number and age (or size) classes of individuals
 - c. Density (number of individuals per unit area)
 - d. Presence of dispersed seeds
 - e. Evidence of reproduction (seedlings, etc.)
 - f. Evidence of population expansion or contraction, e.g. preponderance or young plants at periphery of population or preponderance of dead or senescent individuals at periphery.

C. Phenology

1. Patterns and observed times of budding, leafing, flowering (anthesis), fruiting, senescence, germination, etc.
2. Relation of phenological phenomena to climatic and micro-climatic events.

D. Reproductive ecology

1. Types of reproduction, relationship to age of plant, and evaluation of relative importance of each type to maintenance of population.
 - a. Outbreeding (dioecy, protandry, heteromorphy, self incompatibility, etc.)
 - b. Inbreeding (cleistogamy, autogamy, etc.)
 - c. Nature, rate, and extent of cloning.
 - d. Other asexual reproduction and/or dispersal (rhizomes, tubers, layering, agamospermy, etc.)
2. Pollination
 - a. Mechanisms (mechanical, insect, wind, water, etc.)
 - b. Specific known insect (or other) pollinators, or agents, if applicable--(agent has actually been observed pollinating taxon).
 - c. Additional insect (or other) visitors or other possible pollination agents--(agent suspected of being a pollinator).

- d. *Response of pollinators and suspected pollinators to succession, pesticides, pollution, landuse changes, exotic animals, etc.*
- 3. Seed dispersal
 - a. *General mechanisms (wind, water, animal, etc.)*
 - b. *Specific agents*
 - c. *Response of mechanisms and agents to disturbance and/or habitat alteration*
 - d. *Dispersal patterns (distance, frequency of distribution in a particular area, etc.)*
- 4. Seed ecology
 - Indicate whether observations based on natural or laboratory conditions.*
 - a. *Amount of seed production and nature of year to year variation.*
 - b. *Seed viability and longevity--(how many seeds germinate after specific time intervals).*
 - c. *Dormancy (whether the seeds appear to have dormancy requirements).*
 - d. *Germination requirements, e.g. scarification, cold temperatures, and light.*
 - e. *Percent germination, under various conditions.*
- 5. Seedling ecology and morphology
 - Include characteristics used to identify seedlings and important ecological factors, e.g. light, moisture, and nutrient requirements.*
- 6. Dynamics of competition
 - a. *Intraspecific*
 - b. *Interspecific*
- 7. Survivorship and nature of mortality at each life stage,
 - e.g. seedling mortality due to predation or due to intraspecific competition.*
- 8. Overall assessment of reproductive success--*is the taxon reproducing successfully?*
- E. Hybridization; *specify nature of evidence*
 - 1. *Naturally occurring*
 - 2. *Artificially induced*
- F. Symbiotic relationships:
 - Mycorrhizal, bacteriorrhizal, or other.*
- G. Associates:
 - Plants or animals upon which this species is obligatively or facultatively associated, e.g. hosts for parasitic or saprophytic plants.*

H. Herbivores, parasites, predators, diseases, and pests
(*native, naturalized, or exotic*) affecting this species.

1. *Nature plants*
2. *Seeds*
3. *Seedlings and juveniles*
4. *Pollen*

I. Interactions with exotic plants, animals, and microbes

J. Interactions with human activities

1. *Effects--positive, neutral, or negative--of human activities (soil disturbance, erosion, drainage, fencing, mowing, burning, forest cutting, nutrient enrichment, herbicides, insecticides, irrigation, agricultural tillage, grazing, road salting, mining, trampling, etc.*
2. *Visitor impacts on populations and/or habitat (trampling, firewood gathering, tree damage, garbage dispersal, trail erosion, vehicle damage, camping, wildflower or specimen collecting, soil compaction, etc.)*

K. Other factors

8. Management Practices:

Results and effects, repeated by portion of range as necessary.

A. Review of past management and land-use experiences, if any, e.g. *prescribe burning, clearcut/burn, water manipulations, herbicide use, exclosures, and over-story thinning.*

1. *Taxon of interest*
2. *Related taxa*
3. *Other ecologically similar taxa*

B. Performance under changed conditions, i.e. *observations on populations that appear to survive adequately under conditions that are different from the natural habitat of the taxon.*

C. Current management policies and actions:
Current actions of landowners--positive or negative--e.g. prescribe burning, clearcut/burn, and water manipulation.

- D. Controlled propagation techniques appropriate, and ease of use for each technique.
- E. Ease of transplanting cultivated material into natural habitat(s).
- F. Pertinent horticultural knowledge concerning ecologically similar, related taxa.
- G. Status and location of presently cultivated material (including commercial stocks, arboreta, botanical gardens, research greenhouses, private gardens, etc.).
 - 1. Specimen plants
 - 2. Self-sustaining breeding populations
 - a. Open-pollinated
 - b. Controlled-pollinated
 - 3. Stored seed (or other stored propagule) banks and age and expected longevity of propagules and sources of seed supplies.
- * 9. Current land ownership and management responsibility, repeated by portion of range as necessary. If information unknown, indicate possible sources for it.
 - * A. Owner, e.g. federal agency, state, county, municipal or private.
 - * B. Management responsibility if different than owner
 - * C. Easements, conservation restrictions (e.g. Natural Area), rights-of-way, special designations, if any.
- * 10. Evidence of threats to survival:

Indicate one or more; include indication of portion of range to which each applies. These threats (except bracketed items) are taken directly from Sec. 4(a) of the Endangered Species Act of 1973. Potential threats are those which are likely to become significant in the future.

 - A. Present of threatened destruction, modification, or curtailment of habitat or range.
 - 1. Existing threat(s)
 - 2. Potential threat(s)

- B. Overutilization for commercial, sporting, [recreational,] scientific, or educational purposes
 - 1. Existing threat(s)
 - 2. Potential threat(s)
- C. Disease, predation, [or grazing]
 - 1. Existing threat(s)
 - 2. Potential threat(s)
- D. Inadequacy of existing regulatory mechanisms, [including those restricting human activities detrimental to the survival of the taxon.]
 - 1. Existing threat(s)
 - 2. Potential threat(s)
- E. Other natural or manmade factors
 - 1. Existing threat(s)
 - 2. Potential threat(s)

II. Assessment and Recommendations

- * 11. General assessment of vigor, trends, and status of habitat(s), population(s), and individual(s). Summarize briefly the general status of habitat(s) and population(s).

12. Priority of listing or status change

- A. Author's recommendation to U.S. Fish and Wildlife Service: U.S. Department of the Interior.

- * 1. Recommended U.S. Federal status: endangered, threatened, de-list, or not-presently-threatened. 'Endangered' is defined in Sec. 3(4) of the Endangered Species Act of 1973 as "any species which is in danger of extinction throughout all or a significant portion of its range...." 'Threatened' is defined in Sec. 3(15) as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

- * 2. Recommended priority for U.S. action, on basis of biological vulnerability, present or potential threats, and adequacy of available information supporting recommendation. Consider particularly information presented in items 7, 10, and 11 of this report.

B. Other status recommendations, e.g. state, provincial, other national, and international.

1. International (Trade Convention¹, Pan-American Convention², I.U.C.N.³, etc.). See references for criteria for these status recommendations.
2. Other nations (e.g. Canada and Mexico).
3. State and/or county
4. Local areas

- * 13. Recommended critical habitat¹⁶ (including buffer zone and/or critical habitat of pollinator(s) and/or dispersal agents where necessary.)¹⁷ In most cases this information is required by the U.S. Fish and Wildlife Service for final listings.

A. Concise statement of recommended critical habitat

B. Legal description of boundaries; include latitude and longitude, range-township-section, and/or UTM, (supply detailed map(s) in Appendix).

14. Conservation/recovery recommendations

A. General conservation recommendations

1. Recommendations regarding present or anticipated activities that appear to jeopardize the continued existence of the species, e.g. recommend immediate modification or termination of mining, grazing, or ORV use in critical habitat.
2. Areas recommended for acquisition, designation, or other protection; indicate urgency of action for each.
3. Management and recovery alternatives recommended, e.g. prescribe burn, fencing, removal of exotics, and overstory thinning.
4. Other recommendations

- B. Monitoring activities and further studies recommended, specify type, frequency, and person(s), institution(s), or agency(s) responsible.
15. Recommended distribution for present status report and future information, e.g. federal agencies, botanists with expertise in this taxon, local botanical clubs, native plant societies, Smithsonian¹⁸, and I.U.C.N.¹⁹. Give addresses for each.
16. Responsibility:
Recommended person(s), institutions(s), or agency(s) in addition to the U.S. Fish and Wildlife Service to take responsibility for maintaining currency of status report on this taxon, e.g. other government agencies, local botanical clubs, and knowledgeable persons.

III. Data Sources

- * 17. Authorship
- A. Principal author(s) of statement with affiliation, address, and telephone number for each
- B. Date of present report
- * 18. Knowledgeable persons:
Persons with pertinent experience or knowledge (including local residents or other individuals familiar with the locality for each site); give name, affiliation (if any), address, and telephone of each, along with a statement of the nature of their pertinent experience or knowledge.
- * 19. Data Sources
- A. Documentation
1. Bibliographic references
- a. References cited in report
- b. Other pertinent publications
1. Technical
2. Popular

2. Other pertinent sources of information consulted (if any): list reference works, museum collections, agencies, organizations, individuals.

20. Appendices for reference file.

- A. List of specific localities vouchered by herbarium specimens or other reliable sources, with indication of location of specimens or nature of information for each; and/or source(s) of such information in organized form. List herbaria searched.
- B. Maps
 1. County distribution map(s), if not publicity sensitive
 2. Copies of pertinent previously published distribution map(s), if any
 3. Detailed map(s) of recommended critical habitat(s), if any and if not publicity sensitive.
- C. Photographs and/or line drawings
 1. Mature plants, seeds, seedlings
 2. Herbarium specimens
 3. Key identifying characteristics
 4. Characteristic habitat(s)
- D. Herbaria holding type specimen(s) and/or other reference specimens of recently verified identification.
- E. Copies of pertinent correspondence
- F. Copy of original botanical description, and any recent botanical description(s)
- G. Copies of germane floristic or monographic descriptions
- H. Copies of other materials of reference value

IV. New Information

Include all subsequent finding, not included in present status report, with appropriate information category indicated. Record reviews, responses, and revisions, with dates.

Notes

¹ Convention on International Trade in Endangered Species of Wild Fauna and Flora. Prepared and adopted by the Plenipotentiary Conference to Conclude an International Convention on Trade in Certain Species of Wildlife held at Washington D.C., from 12 February to 2 March 1973. Reprinted in *Extinction is Forever*, edited by Ghilean T. Prance and Thomas S. Elias (Bronx, New York: New York Botanical Garden, 1977), Appendix 1, pp. 389-395.

² Convention between the United States of America and Other American Republics respecting nature protection and wildlife preservation in the Western hemisphere. [Pan American Union Treaty of October 12, 1940]. Reprinted in *Extinction is Forever*, edited by G.T. Prance and T.S. Elias, op cit., Appendix 2, pp. 396-400.

³ R. Melville, *Red Data Book 5: Angiospermae* (Morges, Switzerland: International Union for Conservation of Nature and Natural Resources, 1970-71). See also Grenville Ll. Lucas and A.H.M. Synge, The IUCN threatened plants committee and its work throughout the world, *Environmental Conservation*, 4:3, 179-187 (Autumn 1977).

⁴ Endangered Species Act of 1973, Public Law 93-205, 93rd Congress, S. 1983, December 28, 1973. Reprinted in *Extinction is Forever*, edited by G.T. Prance and T.S. Elias, op cit., Appendix 4, pp. 417-437.

⁵ The two major Federal Register listings are F.R. July, 1975, notice of review for over 3000 taxa recommended for listing by Smithsonian Institution, and F.R. June 16, 1976, proposed endangered status for some 1700 taxa.

⁶ Smithsonian Institution, Report on the endangered and threatened plant species of the United States. Committee on Merchant Marine and Fisheries, Serial No. 94-A. 94th Congress, 1st Session, House Document No. 94-51. (Washington D.C.: U.S. Government Printing Office, 1975).

⁷ Edward S. Ayensu and Robert A. DeFilipps, editors. *Endangered and Threatened Plants of the United States*. (Washington, D.C.: Smithsonian Institution Press, 1978).

⁸ W.R. Powell, editor. *Inventory of Rare and Endangered Vascular Plants of California*. (Rm. 317, 2490 Channing Way, Berkeley, California 94704: California Native Plant Society, 1974).

⁹ Ronald L. McGregor, *Rare Native Vascular Plants of Kansas*. (Lawrence, Kansas: Technical Publication of the State Biological Survey of Kansas, No. 5, 1977).

¹⁰W.M. Fenneman, *Physiography of the Eastern United States*. (New York: McGraw Hill, 1938).

¹¹Charles B. Hunt, *Physiography of the United States* (San Francisco: W.H. Freeman and Company, 1967).

¹²Soil Survey Staff, *Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys*. Soil Conservation Service, U.S. Department of Agriculture. Agriculture Handbook No. 436, (Washington, D.C.: U.S. Government Printing Office #001-000-02597-0, 1975).

¹³"
A.W. Kuchler, *Potential Natural Vegetation of the Conterminous United States*. Am. Geogr. Soc. Spec. Publ., 36, 1964.

¹⁴Robert G. Bailey, *Ecoregions of the United States*. (Ogden, Utah: U.S. Forest Service, 1976).

¹⁵Society of American Foresters, [Citation will be completed.]

¹⁶Critical habitat is defined in the Jan. 4, 1978 Federal Register as

any air, land, or water area exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species, and constituent elements thereof, the loss of which would appreciably decrease the likelihood of the survival and recovery of a listed species or a distinct segment of its population. The constituent elements of critical habitat include, but are not limited to: physical structures and topography, biota, climate, human activity, and the quality and chemical content of land, water, and air. Critical habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion.

¹⁷Some additional criteria suggested for use in determining critical habitat for plants are:

(1) The essential environmental elements that the taxon required during a large number of previous generations.

(2) Associated plants and animals such as pollinators, seed-dispersers, and predators or insect pests. The ranges of these taxa should be included in critical habitat.

(3) The inclusion of a minimal gene pool diverse enough to cope with natural impact.

(4) Consideration of whether long-term essential habitat may be larger than that seen today.

(5) Need for buffer zones

¹⁸Endangered Flora Project, Smithsonian Institution, 1000 Jefferson Dr., S.W., Washington, D.C. 20560.

¹⁹International Union for Conservation of Nature and Natural Resources (IUCN), 1110 Morges, Switzerland.



The New York Botanical Garden

Bronx, New York 10458

(212) 220 8700

May 25, 1978

Dr. James L. Reveal
Dept. Botany
Univ. Maryland
College Park, Md. 20742

Dear Jim:

Thanks for calling this afternoon to request materials for submission to the House committee conducting oversight hearings on the Endangered Species Act of 1973. Copies of the two items you requested are enclosed. Both are of course working drafts of papers we expect to publish in final form later this year, and we request they be identified as "draft" in your submission.

We have been unable to contact Bruce MacBryde to obtain his consent to provide the current draft of the status report outline, which he co-authored, and accordingly supply copies of it contingent on your obtaining his permission to use it for this purpose.

We request that you use these materials objectively, in a way that does not imply our support for other views expressed in your statement. While we may agree with much or all of what else you have to say, we cannot unconditionally support a statement we have not seen.

As you already know, we feel this draft status report outline is already the best available document indicating comprehensively the range of scientific and management information required for assessment of threat or endangerment, determination of critical habitat, and development of management and recovery efforts for vascular plant species.

Yours truly,

Mary Sue Henifin
Mary Sue Henifin
Research Assistant

Jane I. Sawyer
Jane I. Sawyer
Research Assistant

Larry E. Morse
Larry E. Morse
Research Associate
Cooperative Parks Study Unit

cc: Bruce MacBryde

Mr. THORNTON. Perhaps it would be appropriate, Dr. Reveal, if you would make a short presentation, and then we can proceed with some staff questions.

Dr. REVEAL. Thank you, sir. As you are well aware, the botanical community, which is represented here by a minority of one, in fact represents a majority of the endangered species of the world. This is true only for animals. It is not true for plants.

When the initial act of 1973 was drafted, the botanical community was largely informed of this at a late date. As a result, we managed to get one section into the Endangered Species Act, that is, to review which species in the United States were endangered, rare or commercially exploited, and report within 1 year to Congress on which species they were.

That report was submitted within the 1-year period of time. Since then, we have had numerous difficulties, because when the act was drafted, the terms fish and wildlife, or fish or wildlife, were used throughout the act.

In only a few instances was the term "plant" included. While some members have argued that wildlife could be drawn to include the concept of plants, lawyers for the Department of the Interior have disallowed that, and therefore, there needs to be a number of adjustments within the act so that the act is made equal in terms of protection and provisions for both plants and animals.

I have reviewed last week, specifically in section 5, that portions of this section should be modified to allow equal protection for both plants and animals. Today we wish to add to that; in section 6, for cooperative state agreements, that the term plant be added where appropriate, following the terms fish or wildlife, or fish and wildlife, so that provisions of section 6 might be applied to plants as well.

In section 9, the concept of taking applies only to fish or wildlife. And it would be appropriate that the term take, apply to plants and animals equally.

As has already been indicated, there is some difficulty with regards to the consultation process. One way of resolving that, with regards to plants, would by act or resolution insure that recommended list of endangered and threatened plants species, as prepared by the Smithsonian Institution's Endangered Species Committee, and published in 1978—that is, an updated list—be made a requirement for consideration on all environmental impact statements.

Additionally, we feel that——

Mr. THORNTON. How many plants are on that list, that Smithsonian list?

Dr. REVEAL. Approximately 1,800.

Mr. THORNTON. Are these the 1,800 often cited?

Dr. REVEAL. About 1,800, which are endangered. About 2,200, which are threatened.

No, no; 2,400 which were threatened. A total of 3,200.

Mr. THORNTON. Has a petition been filed on all 3,200?

Dr. REVEAL. Published 1975 list, based upon that. Now, from time to time——

Mr. THORNTON. Will there be a petition filed on the remainder?

Dr. REVEAL. I am not certain. There was some question, within Fish and Wildlife, and between those of—

Mr. THORNTON. Of course, other people have the prerogative to file a petition. Are you aware of any plans to file a petition on the remaining recommended plant species?

Dr. REVEAL. As a large group of another several hundred?

Mr. THORNTON. That is correct.

Dr. REVEAL. No. To my knowledge, there is no attempt to do that.

Mr. THORNTON. Why is that?

Dr. REVEAL. Possibly reluctance with Fish and Wildlife itself, although I am not certain on that point at this moment. It seems much more convenient to list groups of species.

We will analyze the 1978—

Mr. THORNTON. Your society, for example, could petition a listing for some of these species. Why have you not chosen to do that?

Dr. REVEAL. Well, for one thing, the association as a group, is just getting started as an organized society in this. We have dealt with this on an members-only base, that is, almost all of the members of the committee, associated with the Smithsonian, are members of either the Botanical Society of America or the American Society of Plant Taxonomists. So as individuals, we have been involved. Whether or not the society itself will analyze the 1978 versus 1975 list, and make subsequent recommendations, I cannot state at this moment. It is possible.

Mr. BEDELL. Could I interject one question at this point?

Are you telling us that people in the Fish and Wildlife Service and Interior Department are discouraging you from filing petitions?

Dr. REVEAL. No; I am not saying that.

Mr. BEDELL. It sounds like it.

For whatever reasons they might be doing it, I was not aware that they should have as one of their objectives in carrying out their duties discouraging people from filing petitions.

Dr. REVEAL. What we have much more concern about is organization. We have 1,800 species that we are faced with right now, of which we have 17 formally listed. We have three more coming along from Ash Meadows in Southern Nevada. I am not certain that we can stand to be inundated with another 50 or 60 species to add to the 1,867 which are on the list right now.

Mr. BEDELL. Just so that planners are aware of these things. I think this one point has to be made in testimony or that as a result of these hearings that people who are in charge of planning projects should be advised early on of possible problems with any listed species in the area.

Dr. REVEAL. In that regard, the botanical community is very fortunate, and in my statement you will find starting on page 20 of my statment, a list of the work that has been done, by State, on an endangered and threatened plant species. This deals with both the United States and Canada. You will see that since 1974, a great deal of work has been done by various agencies of the Government, various private groups, and various groups of individuals associated with societies.

The funding for these programs has been developed largely through other agencies, such as the National Park Service, the U.S. Forest Service, and the Bureau of Land Management. It is through these agencies and State agencies that funding has been made available for precisely the work that is required by the Fish and Wildlife Service so that they can list rare and endangered species of plants.

So we are not discouraged by the Fish and Wildlife Service from listing. It is just whether or not we can get the mechanism by which we should go ahead and do it, should we attempt to do several species at once again.

Mr. THORNTON. Of the 3,200 total, 1,800 of those are those that have already been proposed; is that correct?

Dr. REVEAL. That is correct.

Mr. THORNTON. So we are talking about 1,400 additional plants; these have gone through the review by the Smithsonian Institution; is that correct?

Dr. REVEAL. Yes; that is true.

Mr. THORNTON. And these then represent the recommendations to the Smithsonian Institution, that they qualify for listing as an endangered or threatened species?

Dr. REVEAL. As of the 1978 publication—but again—

Mr. THORNTON. Does that mean there will be some revision of the list?

Dr. REVEAL. Yes. And that list is dynamic. I am certain you can appreciate it.

Mr. THORNTON. I think it both expands and decreases.

Dr. REVEAL. As it turns out, I think the difference between the 1975 list and the 1978 list was something less than 10 species total. They were things that were dropped off. There were things added. But there was no appreciable change in the overall number of individual kinds.

Now, I say that it is a dynamic list because when you consider that in a State like California, which has several hundred endangered and threatened plant species—and is an area, in spite of its size and its very good botanical community—we are still finding undescribed new species, and even genera of plants, that our work is not going to stop simply because we have a published list—

Mr. THORNTON. If I might interrupt you and ask one of the members of the panel a question that is often raised about plants, in this context, and that is: Should we not be less concerned about plants than we are animals?

Dr. REVEAL. And the answer is yes, very simply, although I represent a plant group. That is actually true.

First and foremost, it was alluded to by one of the gentlemen here, of the great so-called Pleistocene extinction, which went on—the so-called Martin hypothesis of Pleistocene overkill—being promulgated by early man. In my opinion, this is a fallacy. We have fairly good documentation right now. In a recent article by by Rouse, he very seriously challenges Martin's thesis.

I have a paper myself which challenges Martin's thesis. And several other people's articles, one published in Science recently, have challenged this.

In essence, what I say is that man was the antagonist of the extinction process, that these animals were undergoing very severe problems due to rapidly changing climate situations.

We are going from a condition of 7 to 8 degrees below—centigrade—below our present day temperature to a condition of 3 to 5 degrees above our present condition—that is also centigrade—in a period of time from about 13,000 BP to about 7,500 BP. All the pluvial lakes dried up. The major ice fields and the continental glaciers disappeared. The extinction process that went on was in the higher mammals, as indicated. Many of these higher mammals were grazing animals. The question that is much more important from the botanical point of view is: What was happening to the plant communities? We know, for example, that the great areas that were prairies in Mexico, in southern California, are now desert. The Mojave desert formed about 3,000 years ago—

Mr. THORNTON. What is the answer to the question. What is the bottom line of all of that?

Dr. REVEAL. The bottom line was that man was the antagonist to the natural extinction rate that was going on. This extinction was a natural process for the animals at this time. Man antagonized it, and this is man's continuing role. We are going to continue to have extinction.

The question is: Are we going to tolerate man's antagonism of the extinction rate? And this is the question that we raise.

Mr. THORNTON. You still have not answered the question: why is it that we should be less concerned about plants than we are about animals?

Dr. REVEAL. There is no indication that we had large plant extinctions going on at the same time. In fact, what we have was simply some modifications.

Mr. THORNTON. I believe Congressman Jeffords testified earlier that plants are more expendable than animals and that the protection that can be afforded plants are readily recognizable.

Dr. REVEAL. Yes, sir. That is true.

Mr. THORNTON. You agree that that is true?

Dr. REVEAL. Plants are much more easy to deal with. For one thing, many plants on the endangered and threatened species list in the Western United States, will require no particular mandated rulings other than to keep a bulldozer from bulldozing it up. Cattle can continue to graze. The lumbering industry can continue to log. There will be no great harm for those species through man's own activities.

The critical thing is: Do you clear cut? Do you overgraze, or do you not overgraze? Those are the questions. Those are the roles that man plays, and man can control.

Mr. THORNTON. Assuming, then, that we should be less concerned about plants than animals, why should we have all of the provisions of the act apply to plants?

Dr. REVEAL. We are only asking for a few changes so that one, we can obtain land for endangered species. I have brought to you—

Mr. THORNTON. I recognize that. I am focussing on section 7. Should plants receive the same protection that section 7 affords animals?

Dr. REVEAL. It would be difficult to say where one would draw the line between a—

Mr. THORNTON. Well, the line has been drawn in other sections of the act quite clearly.

Dr. REVEAL. Only because the Congress did not think to add plants when it proposed the original act. It was an omission of ignorance, not an omission by design.

Mr. THORNTON. If I could draw in some of the rest of the panel at this point—does anybody want to comment on the potential number of animals that may be proposed for listing?

We have had 107 animals proposed. How many more than that do you think are out there that should be proposed, that we just have not gotten around to discovering?

Dr. BERGER. The Endangered Species Technical Bulletin—that the Fish and Wildlife Service puts out contains a listing, a little box at the end. I cannot quote from it precisely but it has the number of animals that are listed, worldwide, the numbers that are proposed—meaning officially proposed, in the Federal Register—and those are under consideration. I cannot quote you what those numbers are.

Mr. THORNTON. I am familiar with the technical bulletin.

My question is related beyond how many animals we are dealing with to give this committee and the Congress a sense of the enormity of the situation.

Dr. ZAGATA. You are going to find out, at least I hope, you will that one of the spinoffs from the nongame legislation will be to place greater emphasis on the identification of animals and the habitats of those animals that have heretofore been relatively ignored. I think that this will be positive in that it may increase initially the numbers of species that qualified for listing. It would also recognize where they are early on and thus help to avoid conflicts with future projects.

I cannot answer your question in terms of how many—I guess there will be some—simply because of our increasing knowledge. But I think that is also positive, because you will not have species coming up midway through projects.

Mr. THORNTON. Of course you are familiar with the allegations that were made earlier today, that five good biologists could go through any stream in the southeastern portion of the United States, and pick up any number of endangered species that have not been discovered before.

Dr. ZAGATA. Having represented the Wildlife Society, the Professional Society of Wildlife Biologists, and being a professional, as Dr. Berger is, in the field of wildlife, I do not think that is true. You might find someone to disagree on a classification. As you know, we have lumpers and splitters, although our techniques for truly distinguishing species have improved greatly. I do not think that your concern is valid.

There is only one person that testified in the Senate that stated that assumption and he happened to be a consultant for TVA. One of his own graduate students disagreed and contradicted that statement.

Mr. THORNTON. We do have at the present time, six separate subspecies of snail darters listed. I am not familiar with the numbers that have been proposed.

Dr. ZAGATA. I do not think those are subspecies. I think they are separate species.

The point is we have hundreds of combinations of colors, fabrics, automobiles, and they do not have to lead to conflicts. They can be identified and categorized and then treated accordingly. We have many kinds of animals out there that do not need to pose a problem, especially if you recognize that they are there early on in a project's planning stage.

Dr. REVEAL. You asked me some questions yesterday with regard to the Furbish Lousewort. If you would like, I have some information for you.

Mr. THORNTON. You can submit that for the record.

[The following was received for the record:]

By Howard S. Irwin, President

Green Guidelines

**Miss Furbish's lousewort
and the Dickey-Lincoln hydro-
electric project**

Much has been said in the past several years about the inverse relation between surging economic endeavor and the decline and extinction of the less common species of plants and animals. Scientific and horticultural concern has been aroused by the constraints recently imposed on the importation of living plants as well as on the transport of threatened and endangered native species in interstate commerce. For example, regulations arising from the Convention on International Trade in Endangered Species went into effect on May 23 and include banning importation anywhere of any materials, including living plants and herbarium specimens of any threatened or endangered species, without an export permit from the country of origin whether or not that country is signatory to the convention. Endangered native species outside the United States require an import permit as well, and a United States export permit is required in order to ship any endangered native species. Truly endangered species of plants covered by the convention are relatively few, but several large groups (all tree ferns, all orchids, all cacti) are included in the threatened category, chiefly because enforce-

ment authorities are unequipped to differentiate the threatened species from others.

Some of the more extreme aspects of the endangered species problem have penetrated the news media, such as the contest between *Pedicularis furbishiae* and the Dickey-Lincoln hydroelectric project. The only known population of the native wildflower *P. furbishiae* (bearing the prim-sounding common name, Miss Furbish's lousewort)—recently rediscovered on low ground along the St. John's River in Maine after having disappeared 30 years ago—would almost certainly become extinct if the 1.3 billion dollar project were allowed to flood the limited habitat of these approximately 200 plants. Since *P. furbishiae* is now one of the 14 native species on the federal endangered species list, the hydro project is constrained from proceeding.

Still greater tension has been generated by the endangerment of a diminutive fish, *Percina tanasi* (snail darter), whose habitat in the only free-flowing section of the Little Tennessee River would be destroyed by the TVA's Tellico Dam, a 100 million dollar facility now under construction and begun before the fish had been discovered.

Needless to say, the legal questions raised by these issues are as mind-boggling as the underlying ethical problems involved. Who determines

the relative values of an endangered species and a conflicting human undertaking? How is such a judgment to be made?

Expedient compromises are to be expected. Among those proposed are: authorizing the Secretary of the Interior to exempt certain federally authorized projects from the habitat-preserving provisions of the Environmental Protection Act, or limiting the taxonomic groups of plants and animals, the protection of whose component species would be governed by law.

More to the point, however, is the question of whether trade restriction and habitat protection are effective ways to preserve threatened and endangered species. Without public understanding and cooperation, they are not, for such regulatory measures will simply invite loophole-seekers to satisfy the demands of the marketplace—whether for electricity at any cost, or off-road vehicular hedonism, or redwood picnic furniture at the backyard barbecue. As long as we continue the exploitation of nature with 18th- and 19th-century fervor, 20th-century technology and 21st-century expectations, species unequipped to adapt to the onslaught will die at accelerating rates. The only sure cure is sustained-yield economics supported by a moral commitment to accommodate nature—including endangered species. □

Garden 1(4): 6-11. 1977.

By Howard S. Irwin

Miss Furbish's Lousewort Must Live

Near extinction, this plant delays a \$1.2 billion dam. Just found in tiny colonies outside the dam area, it may, ironically, be in even greater danger

The Furbish lousewort has entered history as the third party to a triangle with the Army Corps of Engineers and the President of the United States. This rather dowdy member of the large snapdragon family is restricted to a habitat nowhere more than ten feet wide on steeply sloping gravelly banks along a 75-mile stretch of the St. John River in northern-most Maine. It has been proposed as one of the first 14 plant species to be designated for protection under the Federal Endangered Species Act. The Corps of Engineers wants to build a hydro-electric dam that would flood precisely those stretches of the St. John River banks where the Furbish lousewort clings so precariously to life. The President, by coincidence, but moved by conservationist concern as well as by his promise of a balanced budget for 1981, has that dam on the proscription list that would stop the building of billions of dollars worth of dams across the country.

This unpremeditated drama, presently at impasse, raises large and small questions for contemplation. In the millennia of Earth's history, many tens of millions of species have come and gone. Each is (or was) an evolutionary experiment that pits the unique internal genetic record of its existence against the external selective pressures of a constantly

changing environment. Those pressures are exerted principally through the linkage of each species, ultimately, to the life of all others—from those that make food, as green plants do, to the fungi and bacteria that return the substance of living things to the soil. Of the 2 million extant species, some 250,000 are plants, 20,000 of them native to North America (north of Mexico). All species have one single test which they must pass: they must reproduce successfully. Man, for the moment, may be said to have passed this test. The Promethean accomplishments of the human species compel it now, however, to face another: approximately 1,000 species of plants in North America are considered endangered, principally by unwitting human endeavor. One such species is the Furbish lousewort.

To begin with a small question, it is instructive to consider how this unprepossessing plant got into its present fix. Why is its existence in peril, while other plants that share its ecological niche seem to thrive as species, even though individuals come and go according to the vagaries of seasonal change on the riverbank, predation and the multifarious assaults of man?

The plant is named for the amateur botanist Kate Furbish who first suspected its identity as a separate species when she collected herbarium specimens on the banks of the St. John River in 1880. Sereno Watson at Harvard confirmed her discovery and named the species *Pedicularis furbishiae*. (The common name of the genus lousewort, comes

from the old farmer's notion that these plants harbor lice. "Wort" is Anglo-Saxon for plant.) The few subsequent collections showed the plant to be rare and restricted to a 60-mile stretch of the St. John River.

In the decades that followed, this wilderness region, that had already been lumbered when Henry David Thoreau ventured into it in the 1840s, was lumbered again. Large pulp mills were built on both banks. Potatoes, for which Aroostook County is famous, became the staple crop. Lumbering and farming increased the siltation of the brooks and rivulets flowing into the St. John and, along some stretches of the river, extinguished the native plant community. In recent years, tourism and second homes have heightened the human occupation of the region, especially along the river.

Meanwhile, the purely natural processes affecting the river banks continued. Ice dams pile up for a few days or weeks at a time in March and April, sending river levels up ten or 20 feet, drowning, scouring and cutting into banks, often at the sacrifice of riverside vegetation, and thereby forcing the process of colonization to start again. Melting snow, thawing soil and heavy rains bring the collapse of a steep bank here and there, with spruce trees toppling and their undercarpets of bunchberry dogwood sliding down over the alder thickets, locally arresting the dynamics of succession and forcing the process

Unique. The Furbish lousewort.

back to the beginning.

Thus, by the cycles of nature and human activity, intermittent, discontinuous colonies of Furbish lousewort were reduced in number and frequency. After 1943, the date of the last herbarium collection, the plant slipped from sight altogether.

Charles A. Richards, professor of botany at the University of Maine, rediscovered the plant in the summer of 1976, just up-river from the little hamlet of Dickey. This is where the Corps of Engineers plans to build the larger of the two dams in its ambitious \$1.2 billion Dickey-Lincoln hydroelectric project—an earth-fill barrage some three miles long and 900 feet high from the river level, that would back up the river more than 50 miles into the St. John-Allagash Wilderness area and inundate 86,000 acres of valley forest. A smaller control dam would be built a short distance down-river behind the long-closed Lincoln School in the village of St. Francis.

The celebration in the press of the rediscovery of the Furbish lousewort alerted the Corps of Engineers to the prospect that the plant might be designated an endangered species. With some statesmanship, the Corps sponsored the continuation and expansion in 1977 of the search for additional colonies of the plant and study of its physiology and ecology. Richards himself carried on the distributional search, and Lazarus Macior, of the University of Akron, widely recognized as the leading expert on the genus of louseworts, spent the summer in Maine doing the physiological and ecological work.

Behold, the Furbish lousewort

To get a first-hand look at the Furbish lousewort and its situation, I went to Maine during its flowering season in July. Richards introduced me to the plant not at its much heralded 1976 discovery site, but down-river where the St. John draws the U.S.-Canada international boundary, near the little town of Van Buren. We went by canoe to a bend in the river. There the high bluffs over the stony outside bank were densely wooded with white spruce, interspersed

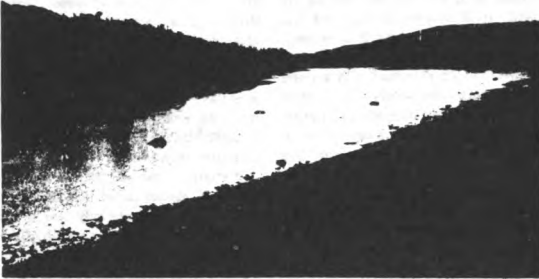
here and there with cottonwood and paper birch. On the narrow, sloping gravel slide at the foot of the bluffs grew thickets of downy alder punctuated with bright clumps of yellow-orange Canada wood lily, pink-lavender joe-pye weed, vivid purple-pink fireweed and yellow fringed loosestrife. In their midst we beheld the Furbish lousewort: a slender 18-inch perennial with a single purple stem bearing widely-spaced, deeply dissected leaves decreasing in size up the stem, surtopped by a tight terminal spike of yellow-green bracts emerging from which were four or five dull greenish-yellow diminutive snapdragon-like flowers about three-quarters of an inch long with just a hint of purple at their closed tips. This plant and perhaps 20 more found nearby, some with as many as four stems but all hidden in the alder thickets and somewhat difficult to spot, made up the colony. The day before, Richards had found this and another colony a few miles farther on, bringing to four the number of colonies he had discovered downstream from the Dickey-Lincoln impoundment area.

It was inside the impoundment area, where six of the ten known colonies of the plant and some 250 of the roughly 350 counted individual plants were located, that Macior set up the base for his studies. From his knowledge of other members of the lousewort genus—a worldwide assemblage of some 200 genera and 1,200 species—he suspected at first that the Furbish lousewort might be restricted in habitat by some nutritional dependency. While most members of the family do make their own food in the usual way from soil nutrients and water and air in the presence of sunlight, some have become partial and even total parasites on the roots of other plants. The Indian paintbrushes (*Castilleja* spp.), for example, are partially parasitic on the roots of grasses and thus, for all their spectacular beauty, cannot be grown in gardens. The yellow rattlebox (*Rhinanthus crista-galli*) and the various species of eye-bright (*Euphrasia* spp.) are also root parasites. Several of the 125 species of *Pedicularis* parasitize the roots of various hosts, but the picture here is

far from complete. The South African genera *Hyobanche* and *Harveya* are total parasites, their tissues devoid of chlorophyll and their useless leaves reduced to vestigial scales. Similarly, all species of the closely related broomrape family, *Orobanchaceae*, are colorless root parasites. Another nearby group, the 250 species of bladderworts (*Lentibulariaceae*), while not parasitic, supplement what food-making capacity they have by capturing minute aquatic creatures in intricate bladders attached to their modified submerged leaves.

Starting at the soil end of Furbish lousewort, Macior found that the bright yellow roots penetrate only two inches into the superficial humusy zone of the alkaline sandy loam. He also concluded that the plant seems well adapted to its rather dry, nitrate-poor, but phosphorus-potassium- and sulfate-rich calcareous medium. From the plant's association with the downy alder, however, he suspected that it might be bound to the alder in some parasitic relationship. Accordingly, he dug up 11 mature plants of Furbish lousewort and carefully washed away the soil. He found not one parasitic connection. It could be that the connections are exceedingly weak, are mere contacts or occur only at certain times in the plant's life. Since Macior was able to replant successfully the subjects of his study in their original colony, it does not seem that such root connections, if they exist at all, are essential.

Macior next turned to the floral biology of the plant, theorizing that perhaps some very special or exquisitely delicate dependence on a pollinator limits its reproductive performance. Characteristic of its family, Furbish lousewort bears hermaphrodite flowers that are bilaterally symmetrical in the median plane, the petals fused to form a tube whose extremities are two curved, tightly appressed lips. The ovary, located at the base of the tube among the four stamens, bears numerous ovules. For pollination to occur, the visiting insect must pry apart the two corolla lips in order to enter or to insert its tongue in search of pollen and nectar.



Designated dam site. River would back up 50 miles and flood 86,000 acres.

After many hours of patient watching, Macior found that the pollinator of Furbish lousewort is the queen of a medium-sized common bumble bee called *Bombus vagans*. By no means limited to this species, *B. vagans* queens are commonly seen at this time of year dancing up the profusely flowering racemes of fireweed, which occurs in dense patches along the river and farther back along roads and in fields.

The effectiveness of pollinators, assuming the flower incapable of self-pollination, is measured by seed set. Thus far, Macior's study indicates that about 50 percent of the flowers of Furbish lousewort go on to form seed capsules. As there are no less than 100 ovules per ovary, and perhaps 25 or 30 flowers borne successively on each spike, it may be estimated (assuming a plant bears a single spike per season) that each plant matures about 1,500 seeds annually—a respectable but by no means extraordinary crop. The tiny seeds are shaken out through cracks in the dry capsule by fall and winter winds, and settle on the ground nearby. The soil around the plants is usually steeply sloping but the seeds are soon trapped among the grains of sand, and, especially when the area is carpeted by the moss

Hypnum, as was most commonly the case, they are protected from all but the most severe hazards. Although Macior had yet to undertake a seedling census within measured squares or quadrants, it seemed that germination was frequent enough but that the plants had a hard time getting established. In spreading their basal rosettes of first-year leaves over the ground, they must compete for space and sunlight with more aggressive and perhaps more adaptable species. Some of these grow so rapidly that light levels on the soil surface leave the lousewort seedlings starved for sun.

The Furbish lousewort's principal and dominating associate, the downy alder, is a rapidly growing shrub which, even when killed back by winter winds and spring ice packs, quickly recovers and soon shades the ground with a dense leafy mantle. In addition to fringed loosestrife, joe-pye weed and fireweed, other common competitors included purple vetch, Bebb's willow, white-fruited dogwood, wild strawberry, flat-topped white aster and even the ubiquitous ox-eye daisy. As a result, only a small number of lousewort plants become robust enough to flower. Most produce a single spike atop a solitary stem. A few grow branches tipped with smaller

spikes. Some plants that flowered last year, still carrying the dried stem as evidence, remained vegetative this year—unusual behavior for perennials.

Turning his attention to the possibility that disease or predation may be a limiting factor, Macior found that by far the most serious predator observed on the plant is the spittle bug. This small homopteran insect sucks juices from the stem and, presumably to seclude itself from enemies and avert desiccation, whips its own exudate into enveloping froth, within which it conducts its activities. When spittle bugs are numerous enough, they can stunt the growth of the stem and cause abnormal development of the flower spike, or sometimes cause it to abort altogether. Later on, when we visited the nearby population of perhaps 150 plants we saw several with abnormally swollen, somewhat flattened stems bearing deformed spikes. Whether this condition, an example of fasciation (the extreme expression of which is known as "witches' broom"), resulted from spittle bug attacks is undetermined. The rather wide range in the sizes of the flowering specimens we saw here and at other stations may reflect varying intensities of feeding by these insects.

Resistable dam, immovable plant

And so, what is the cause of the meager numbers of Furbish lousewort? It seems relatively free of disease, is not the target of predators, lacks any obviously encumbering relationships, is not lacking in pollinators, and appears to produce an adequate, if not generous, seed supply.

The answer seems to be habitat restrictions, which in turn relates to the origin of this species. Where did the plant come from? Among the more obvious possibilities is the widely distributed spring-flowering lousewort (*Pedicularis canadensis*) misleadingly named wood betony, a perennial which inhabits woods and thickets all over the eastern United States. However, it differs not only in flowering time (and thus has a totally different pollinator), but also in many details of flower morphology, plant stature and seed capsule structure. Another species, marsh lousewort (*P.*

pahustris), is a widely distributed biennial of wet places in Europe, Asia and boreal America, but exhibits such great differences in flower disposition, dimension, structure and color that it too can only be considered a distant cousin. Red-tipped lousewort (*P. flammula*) is a diminutive arctic perennial seldom more than six inches tall with the upper lip of the flower flushed crimson; these and other differences similarly remove it as likely progenitor of Furbish lousewort.

Curiously enough, the *Pedicularis* which *P. furbishiae* most closely resembles structurally is *P. bracteosa*, a widely distributed Rocky Mountain species—an affinity noted by Sereno Watson when he first described Furbish lousewort in 1882. This geographical disjunction is paralleled in other pairs of species of *Pedicularis* and by numerous unrelated plants (for example, *Osmorhiza divaricata*, a carrot found both in the Rockies and in upland woods in Maine and adjacent Canada). During the period of great continental glaciation, many plant species migrated southward in advance of the ice, then in the reverse direction as the glaciers retreated. Some distributed themselves east to west along the retreating glacial front, occupying such habitats as became available and in which they were equipped to survive.

It seems possible that *P. furbishiae* is a relic and derivative of that process, its forbears either the highly variable *P. bracteosa* itself or something similar; cut off from the variability available in the wider gene pool of its ancestral species, it remains narrowly adapted in its present very local setting. Whether Furbish lousewort was falling before the first European settlement of the St. John, and thus was doomed to eventual extinction, or had stabilized in its habitat, no one can say. But it is now clearly an endangered part of our botanical heritage, valuable for the ecological lesson it exemplifies, for the many unanswered questions it poses, and, as with any endangered species, for the legal and moral responsibility it teaches us.

With four colonies, and perhaps a fifth on the Canadian side, now counted downstream from the impoundment area,

it may be assumed that the Corps of Engineers will find itself freed of this inhibition to proceed with the Dickey-Lincoln project. At least two points must temper this view: the great majority of Furbish louseworts discovered thus far lie inside the area to be flooded and the colonies outside the damsite area are imminently subject to disturbance and destruction. One lies at the base of a bluff below a private residence the owner of which has constructed a staircase down the slope to the beach, thus unwittingly bisecting the lousewort colony. Although it is unlawful to cut trees within 250 feet of the river, the few spruces left atop the bluff look unthrifty and the alders further down might well be judged to be annoying weeds. Their removal would destroy the colony. Fortunately, the owner was susceptible to Richards' appeal for co-operation in protecting the lousewort plants.

The other three colonies are on privately owned property, but their owners are as yet unknown. Two other downriver colonies, both with small numbers of louseworts, were lost in the spring of 1977, one the victim of a mudslide, the other a casualty of bank clearing by a private owner. Private owners not only feel no compulsion to protect the Furbish lousewort but, in fact, the prevailing local opinion that Dickey-Lincoln will help cut electricity bills may well place these colonies at hazard.

If the Corps of Engineers persists in its plans and President Carter withdraws his proscription or loses in the showdown, the security of these additional stations, and any others that may turn up, becomes critical for the survival of Furbish lousewort. Steps must be taken—and taken soon—to protect these riverside strips. They could be declared critical areas by the State of Maine and subjected to habitat-protecting restrictions; they could be acquired by the state or the Federal government or by the Nature Conservancy. By one means or another, they must be placed under management that will preserve the Furbish lousewort. □

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By Howard S. Irwin, President

NYBC

Green Guidelines



Each of today's decisions determining the fate of an endangered species sets a course for thousands of such decisions to come in the near future

Except for the Furbish lousewort, few endangered plant species of the Northeast have reached public notice. Botanists are usually unwilling to disclose much information about rare species for fear of some avaricious soul secretly trekking to the site, shovel in hand, and decimating the population. It has happened. And yet, our system of government is based on public participation and consensus, in this case, one hopes, leading to the acceptance of the premise that conservation of nature in all its diversity, is good because it is in our own best interest; that in understanding our obligation to protect a troubled species of life, we should also learn the reasons for the parlous state of its existence and apply the lessons so learned to ourselves.

Thus the purpose in pursuing the study and protection of endangered species is positive and self-motivated, and certainly not a negative rear-guard action.

Serious problems arise, however, when such Olympian intentions conflict with immediate economic gains. Few will seriously argue against that right of endangered species to live, and thoughtful people everywhere agree that reasonable measures should be taken to assure their natural evolution. Protection of an endangered

plant species, however, requires the designation of habitat—of real estate—as a preserve in which human impact is strictly limited. When this same real estate is desired for man's economic gain or his leisure, in a way that is incompatible with the require-



The Furbish lousewort, Pedicularis furbishiae. Photo by Doug Gruenau.

ments of the protected plant, tension mounts.

In the case of the Furbish lousewort, the generation of electricity would destroy an immense area of exquisitely beautiful wilderness land, a minute niche of which is occupied by the Furbish lousewort.

The endangered species issue is simply another symptom of the alarming disharmony between human aspirations and the requirements of the world of living nature to survive. It is very easy to dissect the issue on human terms and marshal emotion in support of a poor helpless plant (though less easy than for a poor helpless animal), but this is feeble artillery against the tremendous economic and political forces arranged behind so major a "public" project as a hydroelectric dam. Fortunately the Furbish lousewort story (see *Garden*, September 1977) offers a solution that can satisfy both sides. By contrast, most others, (such as the well-publicized snail darter—Tellico Dam) do not and thus become a test of our deepest values. Other tests are sure to follow and each decision will help determine the next.

"How can three or four hundred weeds hold up a billion-dollar project that we need?"

"Do you mean to tell me those weeds are worth \$3 million each?"

"We want cheap electricity. We deserve it."

These quotations, gleaned during a recent trip to the site of the Dickey-Lincoln dam project on the St. John River in Maine, bring to mind a frequently quoted exchange begun by a sunbather on a beach who asked, on looking at some grains of sand in his palm, "What good are they?" Replied zoologist Marston Bates, "What good are you?" □

Mr. THORNTON. I want to ask one question that the Chair asked me to address to anyone who wants to answer the question. This refers to Congressman Jeffords' testimony to the dramatic increase in wildlife imports between 1972 and 1976.

Tom, are you familiar with that testimony?

What accounts for the really radically alarming increase of from 1.7 million wildlife items, imported in 1972, to 91 million in 1976?

Mr. GARRETT. I gather that demand is vastly increased, and certainly advertising is increased. Wildlife products have been advertised like mad in the last several years.

Mr. THORNTON. Do you know the source of these statistics?

Mr. GARRETT. Some endangered species bulletin, research done at the endangered species office, at least gotten in down there.

Dr. REVEAL. We have similar problems occurring right now with regard to cactus and orchids and other succulents. We are finding a great increase in importation from countries into this country in an attempt possibly to have plant material in the country, in the form of live plants, cuttings, or seeds, prior to effective review by custom agents of what was coming in.

Right now, agriculture has no program of plant review, so that that is possible, almost at will, for any kinds of plants to come in.

We recently had an instance in southern California where South African tree ferns came in through the Federal people but they were picked up by the State people, who happened to have noticed them. And we are having this happening all the time.

Mr. THORNTON. Dr. Berger's testimony addressed the question of arbitration, and cited an example of arbitration under section 7.

Would you recommend the creation of a formal arbitration procedure for the Endangered Species Act?

Dr. BERGER. I am not sure of your question. Are you separating arbitration from consultation?

Mr. THORNTON. That is correct.

Dr. BERGER. Would you differentiate those for me? I see them being much the same, and we have those consultation procedures now established under section 7.

Mr. THORNTON. Of course, but under the regulations, it is up to the agency in the end to decide whether or not there is jeopardy or not, and whether or not they are going to modify that project.

The arbitration procedure may be something that would follow consultation in the case of a continuing disagreement.

Dr. BERGER. I do not see at this time that we should put another hurdle in the process. Let us not provide another opportunity for another level of resolution, beyond consultation? Let us get consultation and try it. If it does not work, then we can negotiate. But I do not see that we need any guidelines to establish parameters for negotiations at this time.

Dr. ZAGATA. The Culver-Baker amendment does this, and the one concern is that it will weaken the consultation process initially. I think that is a very real concern.

At present, consultation is mandatory. But if we do not have to really abide by the consultation process, the decision will be deferred to the next step—the Committee. If you do not consult in good faith, then you take the decisionmaking from the biological into the political arena. We are concerned about the increase in

the number of cases that would go beyond the agency consultation process and into the political arena.

Mr. THORNTON. Of course, you could structure an arbitration procedure that really would concern itself with appropriate modifications, for example, of a project, as opposed to resolving it in litigation.

Dr. BERGER. That is what the consultation is supposed to do, is discuss alternatives. That is also what the EIS procedure is for.

Mr. THORNTON. That is a consultation process. It is not an arbitration process. An arbitration process would be somewhat stronger than that. Arbitration generally is used as a means of short-circuiting litigation.

Dr. BERGER. I think it is something that we should try, should consultation fail. I do not see a need at this point in time for guidelines to govern such arbitration.

Dr. ZAGATA. The ultimate authority rests, even now, with the Congress. And I do not see any reason to insert a step between the agency consultation process and congressional authority. Indeed, if the consultation process fails and Congress calls for vigorous review of the project—as they have done with Telco—then Congress probably will make a decision. If you have an arbitration panel and it makes a politically untenable decision, Congress is still going to want to make the final decision.

Mr. BEDELL. I would like to know what it is in the Culver-Baker amendment that leads you to believe that it would weaken the consultation process. I think it is quite clear on the face of it, and in what they have said insofar as what their intent is, that they do not intend such to be the case. And you are implying that people would somehow get hold of information indicating that a problem exists and not fully consult with Interior.

I do not think you have laid any foundation for that assertion.

Dr. ZAGATA. Well, I think we do.

Mr. BEDELL. You have a professional manner, and I think—

Dr. ZAGATA. I think you will find that you have some agencies that have already shown disdain for the consultation process.

Mr. BEDELL. How can Culver-Baker weaken what they have done? It does not change the regulations which govern consultation.

Dr. ZAGATA. The regulations were not out at that time. They are out now.

Mr. BEDELL. How does the Culver-Baker bill weaken this?

You are telling me the public officials are going to put their careers on the line and arbitrarily violate those regulations?

Dr. ZAGATA. An autonomous body, such as TVA, may indeed not consult in good faith. Now, you prove to the proper authorities who can place my job on the line, that I did not consult in good faith and you are a good man. I can comply with the act, to meet the minimum limit of the law and still not have the best interests of the Endangered Species Act at heart.

Mr. BEDELL. I do not believe that such an agency would get their project reviewed by the arbitration board set up under the Senate bill, because the staff of that board and members of it certainly would be cognizant of the fact that an agency was avoiding consultation on the project. The disputed project would not go forward.

Dr. ZAGATA. Look at the people that compose the board. They are administration people. They are not elected. That board will be dynamic and thus the concern for conservation of endangered species may be subject to change as administrations change.

If we have an administration in power that happens to be less lenient toward environmental considerations, that could be a very heavily weighted board.

Mr. BEDELL. Even under the Nixon administration CEQ had twice the people it has now, there are only about half that number.

Dr. ZAGATA. Numbers do not indicate a thing, in terms of intent.

Mr. BEDELL. I think that activities went forward pretty well.

Dr. ZAGATA. I agree that there were and are some good people representing the administration. Do not be misguided by that. You can put a lot of people in a broom closet. So I think there is concern, about the proposals to weaken the act. However, there may be ways to strengthen the Endangered Species Act. If you look at the reason the amendment was proposed, you will find that it was not proposed by people who were indeed trying to strengthen the Endangered Species Act. They were trying to get around a politically untenable problem, and that was Tellico.

I do think that there may be ways to strengthen the Endangered Species Act. Part of the Culver-Baker language may provide that type of vehicle. But I do not want us to get led down the blind path. And I think you know that is absolutely not the right way to go.

Mr. BEDELL. But you do not cite any specific language. Maybe you could do that for the record for us. It would be a help to us.

Dr. ZAGATA. I would think that probably staff would be working with many of the people here, if it ever came to that point, to discuss that issue.

Mr. THORNTON. One standard in the Culver-Baker amendment is that before they can consider a project for potential exemption, they have to make a finding that the consultation process was complied with.

Do you have some problem with that provision?

Dr. ZAGATA. Who makes that decision? There are a lot of people who are awfully good at making a good appearance. I think in the real world, when you have agencies who do not want a project held up, and you are requesting approval of that project, you are going to find attempts to circumvent the law. I cannot imagine it will be otherwise. Having fought development agencies now for the big part of a decade and watched them in action, I cannot foresee anything else but an attempt on the part of those agencies, when it looks like the committee might act in their behalf, to go in their direction.

I cannot imagine them doing anything but trying to shunt that decision to the said committee unless the committee rejects some projects on their lack of merit.

Mr. THORNTON. But the decision whether the consultation process has been complied with would be made by the committee.

Mr. BEDELL. We are facing a legislative decision. One legislates on the assumption that people are going to carry out their duties as assigned, and it is our duty then, beyond that, to have oversight

and to inquire into whether or not they are going to do it. We cannot legislate for gods.

Dr. ZAGATA. Would it be possible for you to adjourn the meeting so that this could be off the record. We are getting into things that we have not established policy on—I do not think anyone else has—with our board of directors.

Mr. THORNTON. I do not want to go off the record. We will close in a moment.

Whoever on the panel wants to respond; what do you think is the appropriate policy under the act for transplanting species that run into a conflict with proposed projects?

Dr. ZAGATA. If the transplantation is successful over a long enough period of time so that the species is no longer in danger, then you no longer have a critical-habitat issue.

Dr. BERGER. I think a transplantation is a wonderful way of expanding the species' range. Trying to get a second population of whooping cranes is a good example.

As a solution to solving conflicts, it is not acceptable.

Mr. THORNTON. But is it your understanding of the act, however, that even in the Tellico case, if the snail darter is successfully transplanted the Little Tennessee River would remain critical habitat?

Dr. BERGER. Correct.

Dr. ZAGATA. Unless the population expands to the point where it no longer is in danger? But just transplanting does not eliminate the criteria.

Mr. THORNTON. Transplanting is not a panacea then.

Dr. ZAGATA. It may lead to that if done properly and for the necessary time span.

Dr. REVEAL. Not until the species is removed from the endangered or threatened list.

Now, with regard to plants, we have a much more difficult question, for it is relatively easy to transplant a species from one area to another. Getting it to survive is very difficult. A restricted pollinator system would require one relationship. Moving the plant to an area which has the same climatic conditions for survival must be done, but also in some way one must move the pollinators too. That is not often easy to do.

Mr. THORNTON. One final question. That is, why should the act apply to subspecies and other taxa and individual population and not to single species?

Dr. BERGER. Who are you asking?

Mr. THORNTON. Anybody who wants to respond.

Dr. REVEAL. Let me handle this one, first, for plants. We have many species in which the species itself, the typical subspecies, is rare and endangered. Whereas a form or variety or subspecies of that species is widespread and common. Now, if you mandated that the species is projected in an instance such as that, you are defeating your purpose.

Mr. THORNTON. The act already provides that protection, since it applies to subspecies and individual populations—

Dr. REVEAL. No; it does not.

Mr. THORNTON. The problems of the act would be increased. Under the act, even if there are subspecies that are not considered

threatened or endangered those elements of the species that are endangered would be listed.

Dr. REVEAL. That is not the way we are handling it with plants.

Mr. THORNTON. No plants have been listed.

Dr. Berger or Dr. Zagata, could you respond to the question as it relates to animals?

Dr. BERGER. I could draw a little chart, but if you are familiar with the process of speciation, it can be diagrammed as a tree or a series of bifurcated lines. At any point in time, you may draw a line through, and it represents a moment.

If you look at this diagram close up—you may have a limb just beginning to start. Now, at this point in time, it can be called a subspecies, because it is very close to what was its nearest relative. But as time goes on, these limbs become more separated, so that in maybe 20 years, 50 years, or 1,000 years hence, it would be classified as a separate species. So you know it is a question of time.

There are several kinds of biological criteria for determining speciation. Within the biological community, there is no established set of criteria for what constitutes a species, subspecies, or a race.

Mr. THORNTON. So providing protection for subspecies essentially gives us flexibility and leeway, in that regard?

Mr. GARRETT. I wonder if I could direct a question to my colleague.

Does it not make more sense, in protecting plants, to protect plant communities, rather than to protect single plants?

Dr. REVEAL. We are urging that critical habitat be vitally interacted with the designation of the endangered and threatened plant species. We have, like you have for lesser animals—by that, I mean those which do not move very far, plants which do not move at all—and it is critical that when a plant species is placed on an endangered species list, that its critical habitat also be included.

Now the difference here is that in some instances, the management of that critical habitat will not require any change at all. We foresee, in many instances in the western States, where the present-day management processes will continue. What we are really concerned about is the outward, wanton destruction of the habitat.

Mr. GARRETT. For example, once you lose tall grass prairie how are you going to restore it?

Dr. REVEAL. You cannot.

Mr. GARRETT. You cannot arbitrarily restore a tall grass prairie. You would have a terrible time, and it seems to me that when you lose a community like that, you may have lost it for all time. And you lose—I am not terribly concerned about something like the furbish lousewort. Frankly, it seems to me that you probably preserved the plant.

Mr. BEDELL. I have two general questions, which I would like to ask. One question goes to the land acquisition program that the Secretary has to establish and implement under section 1534 of the act. He is directed to, as I am sure you know, to acquire land, water, and interests therein, for the purposes of the Endangered Species Act.

Is this an area where the lack of money and people has hurt?

Dr. REVEAL. We cannot do it for plants. It cannot be done.

Mr. BEDELL. From your earlier testimony, how about animals, then?

Dr. ZAGATA. I think it is just getting underway. It is probably too soon to make a valid statement on it. In general, it tends to be inadequate, and if you look at the Fish and Wildlife Service personnel ceilings as well as those of BLM and the Forest Service, there is just no way that the job is going to be done. BLM spends about 1 cent per acre, and the Forest Service, 8 cents per acre; and Fish and Wildlife Service about \$1.43 per acre on refuges. That is just not going to cut it.

Mr. BEDELL. Are other moneys available, under other acts, that could be pressed into use, even though endangered species funds are not available?

Dr. ZAGATA. The land and water conservation fund moneys are primarily for recreation. Maybe some recreational areas that would fall under this would also benefit threatened and endangered species. The migratory bird funds could help, but they are already pressed to the wall and overcommitted.

Mr. BEDELL. Did anyone else want to comment on the land acquisition question?

In regard to the recovery teams, as I understand it from talking to people around the country there has not been enough attention given to the establishment of recovery teams. I was wondering if anyone on the panel had any direct experience with recovery teams or their effectiveness.

Dr. BERGER. I have had no direct experience, except review of some draft recovery plans. However, I know it is similar to listing species. It is easy to make a list. It is easy to set up a team, to find people to serve. As you point out, it is hard to resolve the differences, especially with endangered species, because the fact that they are in danger makes them difficult to study, to find out what to do—how to expand their range, or increase their numbers.

Again, some decisions have to be made. With the number of species on the list, it is difficult to have a recovery team that has enough funds to study, and ask people questions and put together documents on recovery plans.

Again, money is a shortage. It is a continuing problem in this area.

Dr. REVEAL. With regards to plants, we do not have provisions for recovery teams. But we find that with most instances, the agencies, the landowning agencies, and private landowners, are extremely cooperative. And this is particularly true with the Forest Service, Park Service, and Bureau of Land Management. And we have had a great degree of success with these agencies, simply in making sound, reasonable management decisions upon how the land should be used.

And for plants, this has proved very successful.

Mr. BEDELL. Thank you very much.

Mr. THORNTON. At this point, there are a number of statements here various individuals have requested to be included in the record. They will be included.

At this point, we will adjourn the hearing until the 15th.

[The following were received for the record:]

STATEMENT OF HON. WILLIAM LEHMAN, A REPRESENTATIVE IN CONGRESS FROM
THE STATE OF FLORIDA

Mr. Chairman, I would like to express my strong opposition to any attempts to weaken section 7 of the Endangered Species Act of 1973. This section which requires Federal agencies to prove that any actions authorized, funded, or carried out by them do not jeopardize the existence of endangered species or destroy or modify their habitats is an extremely important part of our Endangered Species Act. Section 7, as it is presently written, is vital to insure the continued existence and protection of Florida's endangered species.

Section 7 establishes a consultation procedure designed to prevent potential conflicts between Federal agencies and the law. An important advantage of this consultation process is that it raises the environmental consciousness of our Federal agencies when they are making decisions that can affect our environment now and in the future.

This consultation process has been successfully implemented on numerous occasions with respect to Federal projects in the State of Florida. When the Bureau of Land Management wanted to issue preference right leases for surface extraction of phosphate in the Osceola National Forest in Florida, a consultation under section 7 of the Endangered Species Act of 1973 was requested.

After a careful review, the Fish and Wildlife Service determined that many of the endangered animals who lived in this area would not be harmed. However, restrictions were necessary to insure the protection of the Florida panther, the Bachman's warbler, the ivory-billed woodpecker, the red-cockaded woodpecker, and the Eastern indigo snake. The section 7 consultation procedure will help to prevent irreversible harm to these endangered animals.

The Florida manatee, protected by the Endangered Species Act of 1973, is a harmless, large and gentle marine mammal, with no natural enemies or special defense except flight. Its only enemy is man, especially man in his motor boat. Sadly, nearly every manatee has scars as a result of being hit by a motor boat.

When the Bureau of Land Management requested formal section 7 consultations on the effect of the proposed Outer Continental Shelf Oil and Gas Lease Sale No. 43, the potential impact on the Florida manatee was carefully assessed. After reviewing the available data, the Fish and Wildlife Service decided that neither the manatee nor its habitat would be adversely affected. However, information did not exist as to where boating activities necessary to support exploration and development might occur. Therefore, the Fish and Wildlife Service stipulated that any activity or program authorized, funded, or carried out by a Federal agency in Jacksonville Harbor and the mouth of the St. Johns River, critical habitats for the manatee, which might affect the manatee would require further section 7 consultation.

There are large numbers of endangered wildlife that are unique to the State of Florida. More than twenty forms of wildlife are listed by the U.S. Fish and Wildlife Service as being in immediate danger of extinction and several others as "threatened." Many other species are currently being considered for listing, and Florida will probably be the leading State in the continental United States when the status of all the amphibians, fishes, and reptiles are reviewed. The official State endangered and threatened list already contains 86 wildlife forms.

Tragically, Florida has already lost at least eight species of birds and mammals. I cannot support any amendments to section 7 of the Endangered Species Act that would permit an individual to decide whether the benefits of a construction project outweigh the value of any of Florida's endangered species.

In an editorial which appeared in the Christian Science Monitor on May 17, 1978, the matter was accurately summarized as follows: The problem, of course, is whether any group of human beings can realistically determine the intrinsic and ecological value of a form of animal life. And who can say what impact its disappearance would have on the balance of nature? The interdependence of species at best is difficult to determine, and once a type of wildlife is consciously extinguished, it would be too late to change the law.

STATEMENT OF HON. GUNN MCKAY, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF UTAH

Mr. Chairman, members of the committee, I appreciate the opportunity to testify before you today regarding the Endangered Species Act of 1973. As you may know, a Warner Valley Water Reclamation Project is proposed for the Southwestern part of Utah. Although the project is not in my district, I feel strongly that the Fish and Wildlife Service has unfairly characterized the project. By recommending ridiculous

ly high minimum flows, thus endangering the project, the Fish and Wildlife Service demonstrates a lack of understanding about the native ecology of southwestern Utah, and a definite bias against the Warner Valley Water Project.

Utah is the second driest state in the union. Southwestern Utah is one of the driest areas of the state. Portions of the Virgin River dry up every year because of the low precipitation rate and existing agricultural diversions. Construction of the Warner Valley Project would insure a continuous water flow through portions of the river presently dried up much of each year, thereby enhancing the habitat for the woundfin minnow year round in these sections. Minimum flows guaranteed by the project would maintain the existing populations of woundfin in the remainder of the river.

The Fish and Wildlife Service has failed to recommend a course of action which would discharge their obligation under section 7. The act states that: "Federal departments * * * shall * * * carry out programs for the conservation of endangered species and threatened species * * * and by taking such actions * * * do not jeopardize the continued existence of such endangered species * * *." I do not suggest that this poses an obligation on the part of the Fish and Wildlife Service to affirmatively enhance an endangered species habitat. But it certainly does not preclude it.

Some might argue that the construction of the Warner Valley Project is prohibited, even though it would enhance portions of the habitat for the woundfin minnow because it would also modify the habitat of the species, which is prohibited under section 7 of the act. But such a contention is to ignore the intent of the act. In the context in which section 7 is written, it is clear that the proscription for modifying an endangered species habitat is a negative modification, or modification which would damage or weaken the ecology of the habitat. To suggest that it is improper to enhance an endangered species habitat because it occurred as a result of a modification is to ignore common sense as well as the Congressional intent of the act. To disallow usage of an entire water resource, even though evidence indicates projected usage would not adversely impact the habitat is also an improper interpretation of the act.

The Fish and Wildlife Service has mistakenly concluded that construction of the Warner Valley Project must be prohibited unless a certain minimum water flow occurs as a result of the project. However, they have reached these conclusions based on selected information which has been misinterpreted, misconstrued, and misunderstood, while much sound data has been ignored.

Mr. James Deacon, a consultant to the Fish and Wildlife Service, originally recommended a summer water flow of 60 cubic feet per second for a portion of the Virgin River. The Fish and Wildlife Service then took the minimum water flow measurement for one of the wettest years on record (1973) which was 64 cubic feet per second, and added an additional 6 cubic feet per second which was 10 cfs over Mr. Deacon's figure to achieve a grand total of 70 cubic feet per second minimum flow. And this figure was arrived at for a river which has never maintained such a flow at that time of year. The Fish and Wildlife Service admits in their water flow figures, the average spring flow as 90 cubic feet per second, but they then turned right around and recommended, without any basis whatsoever, a minimum of 110 cubic feet per second. Why? One is left to conclude that the Fish and Wildlife Service intentionally structured their data and established their averages in order to justify their predetermined conclusions.

I am convinced that the woundfin minnow in the Virgin River is not presently threatened. The woundfin has thrived in those portions of the Virgin River for over 100 years where they now exist under present irrigation and water use practices. In fact, a study recently completed indicates that there are literally hundreds of thousands of the fish currently thriving in the Virgin River. The Fish and Wildlife Service has recommended the expenditure of $\frac{1}{4}$ of a million dollars over a 5-year period to investigate and study the same things which have recently been studied by an independent consultant, and whose data were ignored in their minimum flow recommendations.

As previously indicated, evidence now shows that adequate habitat for the woundfin minnow will be provided following construction of the Warner Valley Project plus some areas will be enhanced because it would insure a continuous flow through these portions of the Virgin River throughout the dry summer months. Without the project, annual devastation to the woundfin population in these sections of river will continue.

Again, I appreciate the opportunity to appear before this committee. I would sincerely hope that the committee will confirm that section 7 of the Endangered

Species Act permits the construction of a project which will positively modify an endangered species habitat.

STATEMENT OF HON. HENRY S. REUSS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

There has been a great deal of public interest in the Endangered Species Act in the past year, and we have finally begun to confront the fact that wildlife values are close to the hearts of Americans. In the discussions in the press and in Washington, however, there has often appeared to be a measure of wolf-crying going on—that the protections of the Act, while desirable, have threatened to halt development throughout the land. This is, of course, plainly not the case. Moreover, it tends to cast the issue into polarized terms.

Endangered species protection is a national, bipartisan issue which led to the passage of the Act in 1973 by overwhelming Congressional majorities. It is not a policy that is liberal or conservative, nor does it separate North from South or urban voters from non-urbanites.

The endangered species issue is quite simply the recognition that the loss of endangered species has a cost to all of us in scientific, philosophical, biological and aesthetic terms. The loss may also reflect direct human consequences. These are real costs, even though they are often not easily reducible to dollar terms.

It makes eminently good sense to have every governmental decision reflect all the real costs and alternatives associated with a project proposal. That's the way we make our individual decisions in our private lives—we look at an option, figure out all the costs to ourselves whether in financial or nonfinancial terms, consider the other options, and choose the course of action that on balance is wisest and least wasteful.

That is precisely what the Act's Section 7 requires of federal actions. It makes sense. And with active, good faith compliance and consultation by the federal agencies, it also works.

In these circumstances I am pleased to see the committee giving its support to the endangered species program through reauthorization, reaffirming that we are all cooperatively involved in a policy that will continue to be important through the ages.

STATEMENT OF HON. G. WILLIAM WHITEHURST, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA

Permit me to take this opportunity to urge that the Act not be weakened by amendments of the kind proposed by Senators Culver and Baker. These changes are too broad, and would not be limited to a few "minor" species, and their effects could be sweeping.

It is essential to strike a rational balance between the needs of the environment and our economic needs, and I believe that such a balance is possible under the Act as it is presently written. My understanding is that of the over 4,500 conflicts that have arisen in recent years, all but three have been resolved satisfactorily without court action, and only one of the three has resulted in an impasse. Conflicts thus can be and are being resolved equitably through the administrative process, and it seems to me that the Act is already sufficiently flexible.

As what we like to call civilization continues to encroach on what wild areas remain, I think it is incumbent upon us to try to insure that endangered species are not carelessly pushed over the brink to extinction in the name of progress. We owe at least that much, not only to the wildlife with which we share our fragile ecosystem, but to ourselves and the generations to come.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., May 23, 1978.

HON. G. WILLIAM WHITEHURST,
U.S. House of Representatives,
Washington, D.C.

DEAR MR. WHITEHURST: This replies to your May 4 letter transmitting a letter from Mr. Nick Carter and a copy of a U.S. Department of Agriculture permit which authorized the import of a number of different species of birds. Mr. Carter pointed out that the permit had been issued without apparent concurrence by the office of

Endangered Species. This points up the value of implementing the clearinghouse concept for all Federal wildlife permits presently being considered by Congressman Robert L. Leggett's Subcommittee on Fisheries and Wildlife Conservation and the Environment. The U.S. Fish and Wildlife Service, Federal Wildlife Permit Office is also holding discussions with other Federal agencies and offices in an effort to establish the clearinghouse concept as directed by Executive Order 11911. If all wildlife permits issued by Federal government agencies were received by a single office, then all requirements for permits could be considered simultaneously and a final action taken based on all laws and requirements.

However, even though the U.S. Department of Agriculture has issued a permit authorizing the import of various species, you can be assured that if these species are in any way protected by U.S., international or foreign law they must be accompanied by the proper permits or other documents authorizing their import into the United States. This would mean that should one of the species be found on the U.S. Endangered Species list, an import permit would have to be issued by this office.

Likewise, if an export permit was required from the country of origin, then the shipment would have to be accompanied by that export document before it could enter into the United States. For example, if the shipment contains species found only on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora it needs to have both the USDA permits and the foreign documentation required by the Convention (50 CFR 23.14 enclosed).

Even though the U.S. Department of Agriculture has authorized the import on the basis of animal health concerns, this does not obviate the need for the importer to acquire the other necessary permits from the U.S. Fish and Wildlife Service or other government agencies, either foreign or domestic. Should the shipment be made without the proper permits, then it would be subject to seizure at the port of entry and the importer subject to prosecution. Once again, I'm sure that you can see that implementing the clearinghouse concept could prevent the situation from degenerating to the point that seizure and prosecution were necessary.

Finally, the U.S. Fish and Wildlife Service Law Enforcement Agents work very closely with Customs Officials. They keep each other informed on shipments such as these, and although there is no help for birds in a seized shipment, illegal traffic is deterred and protection of the wild birds is thereby afforded.

I hope that this answers the question which you raise concerning the U.S. Department of Agriculture permit. If you need additional information please contact this office.

Sincerely,

GARY R. CATRON,
Assistant to the Secretary,
Director of Congressional and Legislative Affairs.

Enclosure.

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This particular consignment Nam Tow could not supply, luckily, since he lacks quarantine facilities, and the permit is lapsed now. But my informant tells me that Mr. Nam Tow is planning to remedy his lack of facilities "to take advantage of the U.S. and U.K. trade". (As things are, so far as I can determine, the U.K. controls are no more effective than the U.S.)

John's copy permits involved mammals as well as birds. One may assume only the situation continues so now with such USDA permits.

I have written to John about this, and I am copying this letter to him also. We do have a serious loophole here and dealers will not be slow to use it. Are you able to help?

In closing, I do understand the problems of inter-departmental liaison having been a bureaucrat years ago. As for U.S. Fish and Wildlife, well, I have a very good opinion of them. They are, after all, second to none on endangered species enforcement. Finally, I cannot disclose my source for this permit as it is a vulnerable source. The authorities in Singapore are authoritarian, and there is no Freedom of Information Act; neither is there in the U.K.

Yours sincerely,



Nick Carter.
Research and Information Officer.

24. Heron

Statement of Ival V. Goslin, Executive Director
Upper Colorado River Commission

My name is Ival Goslin, I am the Executive Director of the Upper Colorado River Commission, Salt Lake City, Utah.

The Upper Colorado River Commission is an interstate administrative agency created by the Upper Colorado River Basin Compact of 1948. The Commission represents its member States, Colorado, New Mexico, Utah, and Wyoming, in matters pertaining to the conservation, utilization, and development of the water resources of the Upper Colorado River Basin.

Mr. Chairman, our Commission appreciates the opportunity to present this statement in support of amendments to the Endangered Species Act of 1973. Experience with the Act since 1973 certainly justifies the Congress having another look at it, and, especially at the manner in which it has been used. American society--human society--cannot survive under a system that effectively precludes the providing of food, clothing, and shelter for its own welfare and existence by preventing the modification of the habitats of lower forms of plant and animal life that have relatively little value to human social, economic, or environmental enhancement. It appears ridiculous to the point of perversity, and completely unreasonable to believe that the human race--especially Americans--would permit a system to exist under which a snail darter in Tennessee becomes more important than the enhancement of man's welfare; or the lousewort in Maine can prevent the production of millions of kilowatts of energy in a nation whose very existence in international relationships depends upon an expanding energy source; or a completely useless-to-man woundfin can prevent the development of a water supply and electric energy for a city and surrounding areas in Utah, Arizona, and Nevada.

Furthermore, it appears that this latter useless rascal, the woundfin, has placed the Congress in an almost grotesquely, ludicrous dilemma. In 1973 the Congress passed P.L. 93-205, The Endangered Species Act, under which, if a critical habitat is designated for the woundfin, it is claimed that the continued existence of such endangered

species may be jeopardized or may "result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical."

In 1974, the Congress passed P.L. 93-320, the Colorado River Basin Salinity Control Act, which authorized the construction and operation of the LaVerkin Springs Salinity Control Unit on the Virgin River in southern Utah, wherein is found the woundfin, as part of an over-all salinity control program in the water-deficient Colorado River Basin and for the social, economic, and environmental benefit of millions of United States citizens. We now note that the entire reach of the Virgin River from LaVerkin Springs to Lake Mead has been proposed for designation as critical habitat for the woundfin, in spite of the fact that parts of this reach are dry for six to eight months of the year. Also, the case of the woundfin raises serious doubts about the real motives of those who are acting under the guise of protecting it as an endangered species. This hardy little bundle of piscatorial energy has survived for thousands of years through many modifications of its habitat by violent natural forces, and through over 100 years of habitat modification by man's utilization of the Virgin River water supply for irrigation and domestic purposes.

Under section 7 of the Endangered Species Act, as interpreted by the courts in other cases, any modification of the habitat of the woundfin would deny the construction of a human environmental enhancement facility in the form of LaVerkin Springs Salinity Control Unit, or the storage and utilization of water in order to provide domestic water for the citizens of St. George, Utah and electric energy for those same citizens plus thousands of others in surrounding areas in three or four States. How much reasonableness is there in this situation? How much "balance" between citizen welfare, guaranteed under the United States constitution, and extreme environmentalism is demonstrated? In fact, one can legitimately enquire, "how much sense is there to permitting two Congressionally enacted laws to exist in direct conflict with each other and subject to interpretation by bureaucratic administrators who are not elected by the affected peoples?"

It is about time that the Congress critically examine the relative values to the human citizens of this country of water and energy supplies versus the critical habitat of the woundfin, as an example.

Dr. John J. McKetta, Professor at the University of Texas, has stated:

"Many people feel that mankind is responsible for the disappearance of animal species. It is possible that in some instances man *may* hasten the disappearance of certain species. However, the evidence indicates that he has very little to do with it. About 50 species are expected to disappear during this century. It is also true that 50 species became extinct last century and 50 species the century before--and so on. Dr. T. H. Jukes of the University of California points out that about 100 million species of animal life have become extinct since life began on this planet about three billion years ago. Animals come and animals disappear. This is the essence of evolution, as Charles Darwin pointed out many years ago. Mankind is a relatively recent visitor here. . . . he has had nothing to do with the disappearance of millions of species that preceded him.

"In fact, one of man's failures is that he has *not* been successful in eliminating a single insect species--in spite of his all-out war on certain undesirable ones in recent years."

It is evident that the exchange of some species of plants and animals for other species is part of the natural evolutionary processes that are inherent in the operation of the universe and the progress of human society. After all, man is part of nature, too, and the fact that he has been the only animal to successfully develop the ability and expertise to control his own habitat should not be removed from his sphere of influence or activities. After all, man hasn't done too bad a job of surviving during his relatively short history on earth when compared with the dinosaurs or trilobites. Had those endangered species along with 100,000,000 others been able to survive what chance would man have had? The so-called endangered species on earth today will be removed from earth regardless of man's activities. The question is not "if?" but "when?"

We are not to be classified as advocates of the promiscuous destruction of truly endangered species of life forms because to retain them for so long as possible under a "balanced" concept of development and preservation is worthy for educational, social, and aesthetic reasons; but for man to be denied the things necessary for his welfare under a man-created legal concept that will not permit the modification of the habitats of lower forms of life or the replacement of those habitats with others of equal value is an act

of self-flagellation and absurdity almost beyond comprehension. The following episode illustrates this point:

Recently in a so-called consultation meeting between representatives of fish and wildlife organizations and proponents of a project that would provide power and water for several hundred thousand people and the benefits of cleaner water for millions of others, the question was asked, "If the project modifies one mile of the stream in which the little silvery fish lives for which you are proposing that a "critical habitat" be established and the project creates 20 miles of better habitat in another reach of the stream would that satisfy protection and enhancement of the environment of that fish?" The answer by the chief representative of the fish and wildlife service was an unequivocal, "No, under the Endangered Species Act you cannot even slightly modify the habitat of that one mile of stream if the modification in any way changed conditions for that fish. The fact that you would provide 20 miles of satisfactory habitat that does not now exist at another location has nothing to do with protecting the endangered species." (the quoted words are not exact, but their meaning is) Unfortunately for man both administrators and the courts have interpreted section 7 of the Endangered Species Act in this manner, and they are probably correct.

Although the law certainly can be construed to have the meaning described above, it is very difficult to believe that the Congress intended that the law should be used to prevent the maintaining and enhancement of the welfare of the citizens of the United States. The existing regulations concerned with consultation among interested entities on determination of critical habitat for endangered species do not establish specific biological criteria to be used to determine critical habitat--or, if an action will cause substantive harm to the species within the designated area. It is evident that the way has been paved for arbitrary decisions which prohibit any and all activities within an area designated as critical habitat. The question is raised: How do you *prove* an area is critical to the survival of a species? Furthermore, there are no provisions in the Act for the withdrawal of an area once it has been designated as "critical habitat." The designation of critical habitat, in the first instance, should encompass other factors as well as those that can be classified as biological. Surely there are human social and economic factors that cannot be ignored. These should also be evaluated before an area is designated as "critical habitat."

Clearly, Congress now has a duty to perform for its constituency in seriously considering the effects of implementing section 7 of the Act in its present condition on Americans, particularly in local and regional situations. It is hoped that the amendments to the Endangered Species Act that this Congress finally approves will permit a much better balance between the conservation and development of water resources for the enhancement of man's environment and welfare and the preservation in their pristine states of the habitats of lower forms of animal life than has been demonstrated in recent years.

Attached, as Exhibit I, is a resolution of the Upper Colorado River Commission, an official entity of the States of Colorado, New Mexico, Utah, and Wyoming, re: Proposed LaVerkin Springs Salinity Control Unit and Amendment of the Endangered Species Act. Although this resolution is directed primarily at the Virgin River conflict, it also illustrates the major problems associated with implementation of section 7 of the Act in a "balanced" and reasonable manner.

Mr. Chairman, for the consideration of your committee members and staff, attached, as Exhibit II, is a memorandum analysis of the Endangered Species Act of 1973, prepared by Mr. Paul L. Billhymer, General Counsel, Upper Colorado River Commission.

If our staff can be of aid to the staff of your committee in the drafting of amendments or in other ways related to problems associated with the Act, please feel free to call upon us.

Thank you for the opportunity to present these views on behalf of the Upper Colorado River Commission and its four member States.

Exhibit I

RESOLUTION OF UPPER COLORADO RIVER COMMISSION re: Proposed LaVerkin Springs Salinity Control Unit and Amendment of Endangered Species Act

WHEREAS, the U.S. Fish and Wildlife Service has published in the Federal Register on November 2, 1977 (42 F.R. 57329) a proposal to establish a critical habitat under the Endangered Species Act of 1973 (87 Stat. 884) for the woundfin (*Plagopterus argentissimus*, a minnow-type fish) in the Virgin River from the backwaters of Lake Mead upstream to Hurricane, Utah; and

WHEREAS, in a news release on November 3, 1977 the Fish and Wildlife Service stated, "Once critical habitat is determined no Federal agency could authorize funds or carry out any action that would jeopardize the continued existence of the species or alter its critical habitat," and by such opinion the Fish and Wildlife Service appears to have decided, prior to habitat classification, that any utilization of the waters of the Virgin River is detrimental to the woundfin; and

WHEREAS, adoption of the proposed regulations would have an adverse impact on the basinwide salinity control program for the Colorado River system as formulated, adopted, and approved by the seven Colorado River basin States and the Environmental Protection Agency by precluding the construction of two proposed salinity control projects, the LaVerkin Springs and Lower Virgin River Salinity Control Units which, when completed, would remove approximately 185,000 tons of salt annually from the river system, equivalent to a reduction in salt concentration of 19 mg/l at Imperial Dam, a significant step towards achieving the goal of maintaining salinity levels at or below those of 1972 in the lower mainstem of the Colorado River, while the basin States continue to develop their compact-apportioned waters; and

WHEREAS, the establishment of the proposed critical habitat for the woundfin would contravene the intent of the Congress as expressed in the Colorado River Basin Salinity Control Act (88 Stat. 266); and

WHEREAS, adoption of the proposed regulations may preclude further utilization of the waters of the Virgin River by preventing its storage in reservoirs and subsequent releases therefrom when needed for domestic, agricultural, municipal and industrial purposes, including the Warner Valley Water and Power Project that

would generate electrical energy for hundreds of thousands of human beings in the Pacific southwest and supply domestic water and power to the rapidly growing city of St. George, Utah; and

WHEREAS, an examination of the available literature reveals that there is a difference of opinion among authorities concerning the need for establishment of a critical habitat for the woundfin; and

WHEREAS, the Colorado River Basin Salinity Control Forum representing the seven Colorado River Basin States by letter of December 8, 1977 to the Secretary of the Interior has expressed its opposition to the proposed regulations and has stated that "--there must be alternatives which will not bring a halt to the construction of the salinity control units"; and

WHEREAS, the health, well-being, and domestic and economic welfare of millions of American human beings should be of more concern to the members of the U.S. Congress and their constituents than a species of fish that has persisted in its existence throughout over one-hundred years of water development in the Virgin River Valley;

NOW, THEREFORE, BE IT RESOLVED by the Upper Colorado River Commission at a special meeting convened at Salt Lake City, Utah on January 10, 1978 that the Secretary of the Interior is hereby requested to refrain from declaring a critical habitat in the Virgin River as described in the Federal Register (42 F.R. 57329);

BE IT FURTHER RESOLVED that prior to February 1, 1978, each of the governors of the four member States of the Upper Colorado River Commission be requested to transmit comments expressing the tenor of this resolution to the Secretary of the Interior and to the Associate Director--Federal Assistance, Fish and Wildlife Service;


BE IT FURTHER RESOLVED that the members of the Congress from the Upper Division States of the Colorado River Basin are hereby urged to seek amendments by the U. S. Congress to the Endangered Species Act (87 Stat. 884) that will clarify that law in such a manner that reasonable precedence can be given to the environment, health, and general welfare of American citizens over other forms of plant or animal species;

BE IT FURTHER RESOLVED that copies of this resolution be transmitted to the Governors and Members of the U.S. Congress of the Upper Colorado River Basin States, the Secretary of the Interior, the Director of the U.S. Fish and Wildlife Service, Commissioner of Reclamation, and other interested entities.

C E R T I F I C A T E

I, IVAL V. GOSLIN, Executive Director of the Upper Colorado River Commission, do hereby certify that the above Resolution was adopted by the Upper Colorado River Commission at the Special Meeting held in Salt Lake City, Utah on January 10, 1978..

WITNESS my hand this 13th day of January, 1978.



IVAL V. GOSLIN
Executive Director

Exhibit II**UPPER COLORADO RIVER COMMISSION**

355 South Fourth East Street
Salt Lake City, Utah 84111

April 6, 1978

MEMORANDUM

TO: Ival V. Goslin, Executive Director

FROM: Paul L. Billhmer, General Counsel

SUBJECT: Endangered Species Act, Public Law 93-205, as amended by
Public Law 94-359.

In order to focus on the real impact of the Endangered Species Act only a few of its Sections will be considered herein.¹ Basically the present law is a continuation of earlier Congressional attempts at protecting wildlife.²

A broad outline of the Act is as follows:

Section 2 sets forth a strong statement of Congressional purposes and policy (16 U.S.C.A. 1531). Significantly Congress indicates that one of the purposes of the Act is "... to provide a means whereby the ecosystem upon which endangered species and threatened species depend may be conserved" Under the policy declaration, Congress seems to announce a mandate to "... all Federal departments and agencies . . . to conserve endangered species and threatened species" Further the Federal establishment is told to "... utilize their authorities in furtherance of the purposes of this Act."

Section 3 is the definition section. In the various definitions Congress has indicated the intent to extend the Act to not only fish and wildlife species but also to plants and to the subspecies of the same (16 U.S.C.A. 1532).

Section 4 sets forth the procedure by which the determination is made for listing the endangered and threatened species. Public participation in the listing procedure is encouraged. The state wherein the species is known to occur is offered an opportunity to participate in the listing (16 U.S.C.A. 1533).

Section 5 allows the Secretary of the Interior to acquire land and water to support a program of protection and restoration of the endangered and/or threatened species (16 U.S.C.A. 1534).

Section 6 provides for a program of cooperation with States whereby States will have input into the operation of the programs looking toward carrying out the mandates of this Act (16 U.S.C.A. 1535).

Section 7 provides for federal interagency cooperation and requires Federal agencies to exercise their authorities so as to promote the purposes of the Act. This section will receive extended discussion below (16 U.S.C.A. 1536).

Section 8 provides a framework for international cooperation looking toward the protection and rehabilitation of endangered and threatened species (16 U.S.C.A. 1537).

Section 9 sets forth the activities which this Act prohibits. Fundamentally the Act automatically protects a species listed as endangered against being taken, possessed, imported, exported, transported, sold, or moved in commerce by "any person." Threatened species may be given the same protection by regulation. The term "take" has been given a broad inclusive definition to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."³ "Harm" has been defined by administrative rule to include "significant environmental modification or degradation" which "significantly disrupts normal behavioral patterns, which includes, but are not limited to breeding, feeding, or sheltering."⁴ (16 U.S.C.A. 1538)

Section 10 provides for some exceptions to Section 9 prohibition. Permits are authorized where the possession will be for scientific purposes or will "enhance the propagation or survival of the affected species." Certain takings by Alaska Natives are regulated under this Section 10 (16 U.S.C.A. 1539).

Section 11 provides for penalties and enforcement. Civil and criminal penalties are authorized. Citizen suit enforcement is also authorized (16 U.S.C.A. 1540).

Section 12 provides for a study of endangered plants by the Smithsonian Institution with the results to be sent to Congress within a year. (16 U.S.C.A. 1541).

Congress, through the Endangered Species Act, sought to accomplish the protection of major decline of species by regulating the two main causes of this decline; namely, (1) the sport and commercial taking of the individual species, and (2) the degradation and destruction of the habitat of the species. Congress recognized these two factors as needing special attention. In the Senate Report 93-307, at page 2, we find the following:

"The two major causes of extinction are hunting and destruction of natural habitat."

The Act itself, in Sec. 4(a), lists as factors to be considered by the Secretary in making the determination requiring the listing the species as endangered and/or threatened:

"(1) the present or threatened destruction, modification, or curtailment of its habitat or range;

"(2) overutilization for commercial, sporting, scientific, or educational purposes. . . ."

One other explanation should be made concerning the coverage of the Act so that its full impact can be understood. The term "species" is defined to include subspecies (Sec. 3(11)). It appears that the protective mantle of the Act will apply when one subspecies is endangered or threatened, even though there may be other subspecies of the same species in abundances.

By definition (Sec. 4(4)-(15)) "endangered" or "threatened" species protection is afforded to the listed species if such is in "danger of extinction throughout all or a *significant portion of its range*" The Fish and Wildlife Service (hereafter Service) takes the position that "localized populations" of listed species must be protected, and the position is justified by the sweep of the statute. Species can be listed by areas also, thus the species may be abundant and unlisted in one area, and listed in another where the listing criteria are found to exist. At least the statutory definition would seem to encourage such a position. This position should be considered with reference to the discussion under Section 7 *infra*. It enlarges the impact of Section 7.

Finally it should be observed that Congress was interested in doing more than protecting the "status quo" of the "listed species." The thrust of the Act is toward developing a program by which the "listed species" become unlisted. See, for example, the definition of "conserve" in Sec. 3(2), reading as follows:

"(2) The terms "conserve", "conserving", and "conservation" mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point which the measures provided pursuant to this Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and translocation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking."

See also 50 C.F.R. 402.02, the regulations issued in connection with Interagency Cooperation required by Sec. 7 wherein the following is found:

"Recovery" means improvement in the status of listed species to the point at which listing is no longer required.

It is with this background that the following analysis is made.

The really dynamic section of this Act is seven, and it is so important that it will be quoted in full:

"Sec. 7. The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical."

It is very likely that the full implications of this section were not realized by Congress when it was before that body. The legislative history on the section is somewhat limited, yet Congress clearly indicated by the changes that it made in the new statute, that it intended some mandatory action from Federal agencies.⁶ Even the implementation by the Secretary of the Interior has been delayed. Final regulations covering Interagency Cooperation Regulations, Endangered Species Act of 1973, were issued January 4, 1978.⁷ Even allowing for the two years or so that these were in the rulemaking process, it would seem that the administrative response has been somewhat delayed.

It is the second sentence of the section which requires the Federal agencies to review their activities in the light of the Endangered Species Act. The burden of this direction is three-fold, namely:

"First, it directs them (Federal agencies) to utilize their authorities to carry out conservation programs for listed species.

"Second, it requires every Federal agency to insure that its activities or programs in the United States, upon the high seas, and in foreign countries will not jeopardize the continued existence of a listed species.

"(T)hird, section 7 directs all Federal agencies to insure that their activities or programs do not result in the destruction or adverse modification of critical habitat."⁸

The above is a statement of the scope of Section 7 from the viewpoint of the two agencies charged with administering the Section 7 program. It is to be noted that these regulations place the real burden upon the program directing agency to make the initial determinations of the impact of its program upon the "listed species." It does seem that

the regulations take the position that Section 7 requires a positive response from the program agency. It should be pointed out that the concern here is with domestic "listed" species.

The regulation in §402.03 clearly indicates that it is intended that

"Section 7 applies to all activities or programs where Federal involvement or control remains which in itself could jeopardize the continued existence of a listed species or modify or destroy its critical habitat."

This construction that Section 7 covers "all" activities of all Federal agencies would seem to include all present on-going activities as well as future activities. This construction also seems to have the backing of Congressional legislative history. The language of Section 7 is not qualified by any such statement as "insofar as practicable." Note also that no qualifying language is found in Section 2(b) "purpose" and 2(c) "policy" section. One author has suggested that the 1969 Act was flawed because of the qualifying language and the change was deliberate to insure that Federal agencies would have a positive mandate to comply with the rigorous requirements of Section 7.⁹

Perhaps it would be helpful to determine what is mandated of Federal agencies by Section 7. It would appear that the first requirement is that the agency institute an internal program wherein the particular agency's basic "authorities" are used to carry out "conservation programs for listed species." Note the statutory language suggests that this program is to be done "in consultation with the Secretary." Apparently the Secretary did not think this injunction required implementing regulations because the regulations mentioned above make no provision for this type of consultation.

Actually the failure to cover this area may be due to the fact that it is probably not an enforceable requirement. Courts are not likely to involve their time in an on-going agency internal operational program. (Query: Could NEPA (P.L. 91-190, 42 U.S.C.A. 432, et seq.) be a tool for the enforcement of this section?) It may be academic because the other provisions of Section 7 really take care of most, if not all, situations.

The second and third requirement will be considered together because one part deals with the species and the other the critical habitat of the same. Here the agency must act to insure that its authorized operations do not "jeopardize the continued existences of the listed species" or result in "modification or destruction" of critical habitat of such species. The Secretary of the Interior is required to make the determination of what is "critical habitat."¹⁰ The Act does not spell out when a determination of "critical habitat" is to be made. In a conversation with local representatives of the Service, it was learned that in some cases the determination will be made at such time as the original listing takes place, but there is no rule that such will

occur. When the Service is called upon to evaluate a project or action, some consideration of "critical habitat" would seem to be required. The regulations issued pursuant to Section 7, above mentioned, really deal with the problems resulting from the "Second" and "Third" above-mentioned requirements.¹¹

The first cut at compliance with the section must be taken by the Federal agency in charge of a program or action. It must consider and determine the impact of such activity on listed species or their habitat. It may seek advice from the Service, which is placed in charge of Interior's responsibility under the Act.¹² This advice does not take the place of consultation. If the Federal agency decides that its activity may affect the listed species or their habitat, there is a requirement for a written request for consultation.¹³ 50 CFR 402.04(a)(3) The agency is responsible for furnishing all necessary information to the Service so that an evaluation can be made. This information may include specialized studies financed by the requesting agencies which the Service finds necessary for the evaluation. The agency is required not to make any irreversible or irretrievable commitment of resources which would foreclose the consideration of modification or alternatives to the identified activity or program. The Service will issue a biological opinion which will evaluate the impact of the project or activity on listed species or their habitat, including any recommended modifications. Note if the modifications are accepted further consultation may be called for.¹⁴

The major concern would be with a "biological opinion" which finds the project or activity in violation of the mandate of Section 7. The responsibility for final decision rests with the Federal agency proposing the action. It must evaluate its position with reference to the opinion and determine whether to proceed.¹⁵ It would appear that it would indeed require a brave agency to proceed counter to a biological opinion. In view of the liberal citizen suit provision provided for in the Act, a citizen suit would seem to follow as a matter of course, using the biological opinion as the basic grounds for a claimed Section 7 violation.¹⁶ Up to the present time no case has dealt with the consequence of an adverse report issued pursuant to the new regulations.

One case should be considered as giving insight as to what the Courts would likely do in this situation. That case is *National Wildlife Federation v. Coleman*, C.A. 5, 529 F.2d 359. The issue involved was an alleged violation of Section 7 of the Endangered Species Act by a highway project which, if completed, would damage the habitat of an endangered species (Mississippi Sandhill Crane). In spite of Interior's determination that unless modified the highway would violate the critical habitat of the crane, the project was recommended by the Highway Agency without the recommended modification.

The Court made some rather significant rulings in the case.

(a) Based on a review of the legislative history, the Court concluded that "Section 7 . . . imposes on federal agencies the mandatory duty to insure that their actions will not either (1) jeopardize the

existence of an endangered species, or (ii) destroy or modify critical habitat of an endangered species."

(b) There is further the requirement to consult with the Service prior to taking action, but the Secretary of the Interior has no veto power over the project if consultation has taken place. (Query: Can the Secretary of the Interior veto a project where consultation has not taken place?) The sponsoring agency must assume the responsibility for the project and "determine whether it has taken all necessary action to insure that its actions will not jeopardize the continued existence of an endangered species or destroy or modify habitat critical to the existence of the species."

(c) Courts will review the agency's decision to determine whether "the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." (citation omitted)

(d) The National Wildlife Federation Appellants had the burden of establishing that the appellees failed to take necessary action to prevent violation of Section 7.

(e) The Court reviewed the evidence and found that the lower court's evaluation of the evidence was wrong. The lower court failed to appreciate the nature of Section 7. The Appellant's evidence indicated that proper modifications had not been made in the project to preclude a Section 7 violation. The Court's injunction in this case was unique. It delayed the highway construction until such time as the Secretary of the Interior found that necessary modifications were made to protect the crane.

The case would indicate that any federal agency planning to continue action after an adverse biological opinion had better have its case in order. It would appear that the agency would at least be required to prepare a well-articulated response to such "biological opinion." Very likely such response would be a part of the NEPA EIS.¹⁷

One further problem raised by this Act should be discussed, namely, its impact on Federal activities started prior to the Act. One such case has been litigated, or better is still in progress, namely, *Hill v. T.V.A.*, C.A. 6, 549 F.2d 1064, 9 ERC 1737, cert. granted, 46 L.W. 3316, Nov. 15, 1977. This case presents a unique situation. The dam in question (Tellico) was almost finished; Congress was aware of the problem, but continued to furnish money for the dam; the fish in question was unknown until 1973--only four months prior to the passages of the Endangered Species Act; the fish was added to the "list" in November 1975 over TVA's objection; suit was brought enjoining completion of the dam in February 1976; and the lower Court found that the dam closure in 1977 would probably destroy the fish, but refused to enjoin the closing. On appeal, the Sixth Circuit reversed the lower court's ruling and enjoined the closing of Tellico.

The court stated the issues as follows:

"(1) Does Tellico Dam completion violate the Endangered Species Act?

"(2) Assuming a violation, are there adequate grounds for exempting Tellico from compliance?

"(3) If no exemption is justified, is injunction the proper remedy to effectuate the purpose of the Act?"

The Court found that certainly the closing would violate the Act. The Secretary's construction of the Act as to "critical habitat" wherein the Secretary by regulation (40 Fed. Reg. 17764-17765) had ruled that any action which:

"might be expected to result in a reduction in the number or distribution of [the] species of sufficient magnitude to place the species in further jeopardy or restrict the potential and reasonable expansion or recovery of that species."

was proper. Note the lower court had found that the closing of Tellico would likely destroy the species. The Appellate Court refused to consider balancing the value of the almost complete project against the value of saving the fish. The Court suggested that the statute was to be taken to its logical extreme, and even if a species was discovered to be endangered on the day before closing, that the closing should be enjoined. The Endangered Species Act does not allow for a NEPA-type of balancing. The Court found that a NEPA balancing error would be subject to later correction, but should the Court grant an exemption here, any error could not be corrected because the species would be gone. The Court found that there were no grounds for exemption and that the injunction was the proper remedy.

Actually the Court returned the Tellico to Congress. If the project is to be completed, Congress will have to face the problem of balancing the value between the fish and Tellico. This is not unlike the Alaskan pipeline case. Congress, by amendment of the Mineral Leasing Act, did allow the construction of the pipeline after the injunction in *Wilderness Society v. Morton*, D.C. Cir., 479 F.2d 842, cert. denied, 411 U.S. 917 (1973). The Congressional exemption procedure on a case-by-case basis may be one way of solving the conflict. Such process if over-exercised would destroy the efficacy of the Endangered Species Act. It does finally depend upon the value system principles which we wish developed. One caveat should be made, *Hill* is before the Supreme Court, and the final word is still out with respect to this case.

One other Circuit Court case should be mentioned, namely, *Sierra Club v. Froehke*, C.A. 8, 534 F.2d 1289, 8 ERC 1944, involving the Meramec Park Dam project impact of the Indiana Bat. After finding that the Endangered Species Act applied to an on-going project, the Circuit Court affirmed a lower court's refusal to enjoin the construction of the dam on the grounds that the evidences were insufficient to make out a case of substantive violation of the Act. This case really does not provide any real insights as to the court's reaction to requirements of the Endangered Species Act.

An observation is in order with respect to the possibilities of control of non-federal actions and projects which impact on the listed species. Note such impact could well amount to a "taking" which has been defined as:

"(14) The term "take" means to harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Section 9 enjoined taking, and as such is subject to civil and criminal penalties in addition to citizen enforcement suits. The impact of possibilities for non-federal activities control has not been fully explored in court cases. It would appear that the Act can be used to attack non-federal activities which might impact the listed species.

Summary

1. Congress in 1973 established a comprehensive method for the protection of endangered and threatened species.
2. This protective system seeks to control taking and habitat destruction of the endangered and threatened species.
3. A special obligation is placed on Federal agencies to "insure" that their actions "do not jeopardize the continued existence of or result in the destruction or modification of habitat of such species."
4. The present court construction of the Act has made the duties of the Federal agencies mandatory, and the Act's application has been broadly defined to include present programs authorized prior to the Act.
5. Courts have refused to enter into a value balancing procedure with respect to mandates of the Act as it impacts the Federal agency on-going programs.
6. The full impact of the Act has yet to be realized with respect to Federal development programs.
7. Non-federal activities would seem to be subject to the impact of this Act.

FOOTNOTES

1. The Act has received extended discussion in legal literature. See Palmer, "Endangered Species Protection: A History of Congressional Action," 4 *Env't'l Aff.* 255 (1975).

Lachenmeier, "The Endangered Species Act of 1973; Preservation or Pandemonium," 5 *Env't'l L.* 29 (1974)

Wood, "Section 7 of the Endangered Species Act of 1973: A Significant Restriction for All Federal Activities," 5 *ELR* 50189 (1975).

Coggins and Hensley, "Constitutional Limits on Federal Power to Protect and Manage Wildlife: Is the Endangered Species Act Endangered?" 61 *Iowa L. Rev.* 1099 (1976).

Note: "Obligations of Federal Agencies Under Section 7 of the Endangered Species Act of 1973," 28 *Stan. L. Rev.* 1247 (1976).

Comment: "Implementing Section 7 of the Endangered Species Act of 1973: First Notices from the Courts," 6 *ELR* 10120 (1976).

2. See Senate Report 93-307, Public Law 89-669, Public Law 91-135.
3. See Section 3(14).
4. 50 C.F.R. 17.3.
5. Other indication of "habitat" concern is found in the purpose section of the Act, Sec. 2(b). See also Sec. 3(2) defining the term "conserve"; Sec. 5 authorizing funding for habitat acquisition; and Sec. 7 to be discussed.
6. See Wood, *supra*, Note 1 at 50199, and the Law Note from *Stanford Law Review* cited in Note 1 at pages 1254-1256 for a discussion of the legislative history. See also 2 *U.S. Code Cong. & Admin. News* 1973, 93rd Cong., 1st Session, at 2988-3008. The most compelling indication of the meaning of Section 7 is found in Congressman Dingell's statement during the debate on the Conference Report where he discusses the law as it existed prior to the 1973 Act in the context of some former Air Force bombing activities:

"Another important step which we have taken in this bill--and in this regard the two bills are virtually identical --is that we have substantially amplified the obligation of both agencies, and other agencies of Government as well, to take steps within their power to carry out the purposes of this act. A recent article in the Washington Post, dated December 14, illustrates the problem which might occur absent this new language in the bill. It appears that the whooping cranes of this country, perhaps the best known of our endangered species, are being threatened by Air Force bombing activities

along the gulf coast of Texas. Under existing law, the Secretary of Defense has some discretion as to whether or not he will take the necessary action to see that this threat disappears—I hasten to say that I believe that Secretary Schlesinger, who I know to be a decent and honorable man, will take the proper steps whether or not the law is amended, but the point that I wish to make is that once the bill is enacted, he or any subsequent Secretary of Defense would be required to take the proper steps." (119 Cong. Rec., p. H11857, 93rd Congress, 1st Session, December 20, 1973, daily ed.)

7. 43 Fed. Reg. 870, January 4, 1978.
8. 50 C.F.R. 402.01 - 43 Fed. Reg. 874.
9. Note: "Obligations of Federal Agencies Under Section 7 of the Endangered Species Act of 1973," 28 *Stan. L. Rev.* 1247-1253. See also Congressman Dingell's statement, 119 Cong. Rec., p. H11837, December 20, 1973 (daily edition).
10. The methods of determination of "critical habitat" are set forth in §402.05 as follows:

(a) *Procedure.* Whenever deemed necessary and appropriate, the Director shall determine critical habitat for a listed species. After exchange of biological information, as appropriate, with the affected States and Federal agencies with jurisdiction over the lands or waters under consideration, the Director shall publish proposed and final rulemakings, accompanied by maps and/or geographical descriptions in the FEDERAL REGISTER. Comments of the scientific community and other interested persons will also be considered in promulgating final rulemakings. The modification or revocation of a critical habitat determination shall also require the publication in the FEDERAL REGISTER of a proposed and final rulemaking with an opportunity for public comment.

(b) *Criteria.* The Director will consider the physiological, behavioral, ecological, and evolutionary requirements for the survival and recovery of listed species in determining what areas or parts of habitat (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of the species) are critical. These requirements include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;

(4) Sites for breeding, reproduction, or rearing of offsprings; and generally,

(5) Habitats that are protected from disturbances or are representative of the geographical distribution of listed species.

(c) Emergency determination. Paragraphs (a) and (b) of this section notwithstanding, the Director may make an emergency determination of critical habitat if he finds that an impending action poses a significant risk to the well-being of a listed species by the destruction or adverse modification of its habitat. Emergency determinations will be published in the FEDERAL REGISTER and will remain in effect for no more than 120 days.

See also Note 12, *infra*.

11. A list of important definitions are as follows:

§402.02 Definitions.

"Activities or programs" means all actions of any kind authorized, funded, or carried out by Federal agencies, in whole or in part,

"Critical habitat" means any air, land, or water area (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species) and constituent elements thereof, the loss of which would appreciably decrease the likelihood or the survival and recovery of a listed species or a distinct segment of its population. . . . Critical habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion.

"Destruction or adverse modification" means a direct or indirect alteration of critical habitat which appreciably diminishes the value of that habitat for survival and recovery of a listed species.

"Jeopardize the continued existence of" means to engage in an activity or program which reasonably would be expected to reduce the reproduction, numbers, or distribution of a listed species to such an extent as to appreciably reduce the likelihood of the survival and recovery of that species in the wild. . . .

"Recovery" means improvement in the status of listed species to the point at which listing is no longer required.

12. Note the National Marine Fisheries Service has responsibility for some administration under the Endangered Species Act, and the regulations were issued jointly. See Sec. 3(10) and Sec. 4.

13. If the Agency decides that its program does not affect the listed species or their habitat, no further action is called for unless initiated by the Service, 50 C.F.R. 402.03(a)(2).
14. See 50 C.F.R. 402.04 which sets forth the regulations on "Consultation."
15. 50 C.F.R. 402.04 (g) reads:

(g) *Responsibilities after consultation.* Upon receipt and consideration of the biological opinion and recommendations of the Service, it is the responsibility of the Federal agency to determine whether to proceed with the activity or program as planned in light of its section 7 obligations. Where the consultation process has been consolidated with interagency cooperation required by other statutes such as the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) or the National Environmental Policy Act (42 U.S.C. 4321 et seq.), the final biological opinion and recommendations of the Service shall be stated in the documents required by those statutes.
16. Section 11(g), 16 U.S.C.A. 1540(g), outlines Citizen Suit provision, even allowing for attorney's fees.
17. See Note, 28 *Stan. L. Rev.* 1247 at 1266, et seq., for a more detailed analysis of this problem.

[Whereupon, at 6:20 p.m., the subcommittee adjourned to reconvene on Thursday, June 15, 1978.]

ENDANGERED SPECIES OVERSIGHT

THURSDAY, JUNE 15, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT OF THE
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:20 a.m., in room 2253, Rayburn House Office Building, Hon. Robert L. Leggett (chairman of the subcommittee) presiding.

Present: Representatives Leggett, Oberstar, AuCoin, and Forsthe.

Also present: Representative Beard, Tennessee.

Staff present: Robert D. Thornton, majority counsel; Charles A. Bedell, minority counsel; W. Patrick Morris, chief minority counsel; Marvadell Zeeb, majority staff.

Mr. LEGGETT. The meeting of the subcommittee will please come to order.

I'm sorry we're late, but quorum calls are a part of the business of the Congress of the United States.

This morning the subcommittee continues its series of oversight hearings on the Endangered Species Act of 1973. The subcommittee is specifically focusing on the operation and administration of section 7 of the act, which prohibits Federal agencies from authorizing funding or carrying out of activities which jeopardize the continued existence of endangered and threatened species, or adversely modifies or destroys their critical habitat.

This morning and this afternoon the subcommittee will receive testimony from a variety of Federal agencies involved in the administration of the act, as well as those agencies affected by it.

It was alleged in testimony 2 weeks ago that the act is inhibiting military operations at a variety of defense installations around the country. The Department of Defense has analyzed these charges and they will be here today to testify about the impact, if any, of the Endangered Species Act on their operations. The Corps of Engineers is also scheduled to testify. Recently the subcommittee asked the corps to conduct a survey of their projects that may be impacted on endangered and threatened species. They were asked to determine whether in those instances, where there is a potential conflict with listed species, it would be possible to make project modifications so that the project can go forward. The corps was asked to list those instances where conflicts have been successfully resolved, and the corps will be here today.

We will have Secretary Cutler here from the Department of Agriculture, so we can look at some of their Public Law 566 projects, and we'll get their views.

We will also hear from Congressman Dan Marriott when he arrives.

At this point I am pleased to welcome the Honorable Rupert Cutler, Assistant Secretary from the Department of Agriculture.

Mr. Secretary, it's nice to have you here.

STATEMENT OF DR. M. RUPERT CUTLER, ASSISTANT SECRETARY FOR CONSERVATION, RESEARCH AND EDUCATION, U.S. DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY DALE JONES, DIRECTOR, WILDLIFE DIVISION, U.S. FOREST SERVICE, AND JERRY McILWAIN, ENDANGERED SPECIES SPECIALIST

Mr. CUTLER. Thank you, Mr. Chairman. It is good to be here.

Mr. LEGGETT. Whatever statement you have will be included in the record as though you read it. You can highlight that, if you care to, or you can read it if you care to do that.

Mr. CUTLER. I am accompanied by representatives of the Forest Service and the Animal and Plant Health Inspection Service, Mr. Chairman, to help me respond to your technical questions.

I appreciate this opportunity to participate in this review of the Endangered Species Act of 1973.

As you know, section 7 of that act made the conservation of endangered and threatened species a basic responsibility of all Federal agencies. The act is one of our most important national conservation statutes, reminding us that wild plants and animals are important parts of our national heritage and essential components of the biological system in which we live. The presence of an endangered species alerts us to the fact that important human values also are endangered when a habitat is modified or diminished. Thus, even though the value of an endangered species is not easily converted to dollars, these plants and animals are important parts of our natural resources public trust.

Based on our agencies' experience with the Endangered Species Act, since its passage in 1973, we are pleased to reaffirm the Department of Agriculture's strong support for the purposes and provisions of the act.

To meet our responsibilities, the Department of Agriculture within its existing authorities and programs, has developed and implemented policies to conserve both plant and animal species.

Our major objective, as listed under section 7 of the act, is to achieve recovery of "listed" species affected by Department programs, in cooperation with other Federal departments, States, organizations, and individuals. USDA management initiatives have included the inventory of habitats and populations, primarily within lands administered by the Department—that's essentially the national forests, plus some research lands—habitat protection and enhancement; the regulation of conflicting uses; research; and coordination in assistance programs to cooperators to achieve the act's objectives.

The Department of Agriculture conducts many programs which involve management and other actions on both Federal and private

lands in virtually every county in the United States. Our activities potentially affect most of the threatened and endangered species in some form or another. More than 70 listed wildlife species and several hundred plant species proposed for listing occur on national forest lands administered by the Department of Agriculture. Significant populations of some species are found on these lands.

For example, the critically endangered Puerto Rican parrot occurs only in the Caribbean National Forest. Mr. Chairman, I was in the aviary that the Forest Service has established in Puerto Rico last December, and just about lost my sense of hearing for a while in a small room with 14 Puerto Rican parrots shouting at the top of their lungs. I can tell you, there are 14 parrots in good health in Puerto Rico.

Mr. LEGGETT. Did they speak in Spanish? [Laughter.]

Mr. CUTLER. The Forest Service has found out that the primary problem seems to be competition with the pearly eyed thrasher, a bird which uses its nesting cavity. So they have come up with an artificial nesting cavity—You're familiar with wood duck nesting boxes. Well, these are long, cylindrical nesting boxes made of 12-inch plastic sewer pipe, and they have a bend in them. It seems that the parrot, when he looks in the hole, doesn't want to see the nest at the bottom, so they have a bend in the bottom of the pipe with a little ladder that the parrot walks down, and the parrot nests in the bottom of this cavity.

The pearly eyed thrasher is then provided with another kind of nesting box of a more straightforward nature, somewhat smaller, and the boxes are painted brown so they won't look too artificial. This apparently has resulted in some comeback of that parrot.

The eastern timber wolf and the California condor survive mainly in the national forests, and it is estimated that 75 percent of the remnant population of red-cockaded woodpeckers is found in the national forests of the South. The grizzly bear, the Little Kern golden trout, and the gila cutthroat trout are also on national forest system lands in important numbers.

The fact that the national forest lands are the last strongholds of these species can be attributed largely to the protection and management practices which have been implemented on the forests with and through the cooperation of the States.

We have been very much involved in endangered species conservation, both before and after the passage of the Endangered Species Conservation Act of 1966. Forest Service efforts to help avert extinction of such species as the California condor go back to 1947, when the Sespe Condor Sanctuary was established on the Los Padres National Forest in California.

Forest Service timber management programs were modified to protect red-cockaded woodpeckers, Kirtland's warblers, and other species before the act was passed. Years ago, even prior to that time, the Department established special management areas within the national forests to protect vanishing species under a Secretary's regulation issued in the late 1930's.

Forest Service research is underway on more than 39 listed species. In addition, a number of special studies have been conducted by agencies in conjunction with management activities and

projects. USDA research efforts have contributed substantially to our knowledge of the life histories and requirements of a number of species including the bald eagle, the Bachman's warbler, the grizzly bear, and the red-cockaded woodpecker.

The Department has cooperated with and supported the Secretary of the Interior by providing information essential to status determinations, by identifying critical habitats, and by developing recovery plans through the recovery team process. We have commented on numerous critical habitat designations and provided recommendations on the listing of about 50 species of wildlife and more than 200 species of plants. The Department of Agriculture is represented on more than 20 recovery teams and has its own endangered species working group. We also provide a representative for the Endangered Species Scientific Authority.

Agencies within the Department of Agriculture have established formal consultation procedures with the Fish and Wildlife Service for all management activities and assistance programs that could affect listed species on both Federal and private lands. In addition, there have been numerous informal consultations with the Fish and Wildlife Service, State fish and game agencies, universities, and interested wildlife groups.

Intensive management of both habitats and populations is vital to the survival of some species. Although passive forms of management, including refuges, wildernesses or other reserves help conserve some species, many other species would rapidly decline without active manipulation of the habitat. Such is the case with the Kirtland's warbler, whose numbers are increasing in response to the direct manipulation of its jackpine habitat through timber cutting, prescribe fire, and the direct control of competing bird species. I have participated in a Kirtland's warbler survey in Michigan and have seen this effective joint Forest Service-State program in action.

Through the utilization of research data and the consultation process, modifications of management practices have been made to protect and enhance endangered wildlife species habitat. The Forest Service, in conjunction with its timber program, has initiated special measures such as the controlling of timber harvest schedules and locations, and the establishment of protective buffer zones around breeding areas, to protect the Bachman's warbler.

The Soil Conservation Service also has encountered endangered species in its small watershed protection program, but through alteration of design, timing, and location, of the projects the adverse impacts were avoided. We also have redesigned structures to include silt entrapment devices and other water quality improvement features.

Mr. Chairman, you mentioned the SCS watershed program, and I would like to point out that over the last year-and-a-half the Department has adopted several new policy directions, some of them in the form of new guidelines published in the Federal Register, to protect wildlife habitat in the small watershed program. We have worked with the Fish and Wildlife Service on new channel modification guidelines to make sure channelization is a last-resort alternative—essentially, ruling out channelization wherever we can, particularly where important fish and wildlife habitat is concerned.

We have required the construction of at least half of the proposed land-treatment measures above these watersheds to avoid the silt filling up those reservoirs, and have taken other steps to improve the environmental impact of our small watershed program.

While spectacular cases involving the Mississippi sandhill crane, the Indiana bat, and the snail darter frequently are cited, and have attracted public attention, the strength of the Endangered Species Act lies in its being successfully applied on a work-a-day basis by people at the field level who are committed to enforce the spirit and intent of the law. These day-to-day efforts have prevented the extinction of some species and reversed downward trends for others, including the American alligator, the eastern timber wolf, the Kirtland's warbler, the bald eagle, and perhaps the peregrine falcon.

The implementation of the Endangered Species Act has resulted in many positive accomplishments. However, our agencies have experienced some problems, mainly with the development of specific, workable consultation procedures, the defining of critical habitat areas, such as that for the grizzly bear, and the formulation of specific management alternatives for some species. A major factor contributing significantly to these difficulties is the lack of sound data concerning the requirements of some species, including their habitat requirements.

With respect to the Forest Service activities, we do not have the legislative authority today to acquire land for wildlife, particularly endangered wildlife, for protection purposes. We have the authority to acquire land for many other reasons, but not to protect wildlife.

Procedures for consultation with all interested parties should be used which assure the timely flow of vital information into the decisionmaking process. We have acquired a great deal of experience in the formal consultation process since the Department of the Interior's regulation on section 7 of the Endangered Species Act were issued in January of 1978. Many problems have been solved through this consultative process. There may well continue to be some conflicts, but as our field staffs become more accustomed to the act's requirements and the new regulations, we anticipate that most potential conflicts will be discovered and avoided at an early stage. The fundamental conclusion from past experience is that good faith consultations can reconcile the competing interests in virtually all cases.

The listing process under the act is a dynamic one. For example, in the United States only 17 plants have been officially classified, while over 1,700 have been proposed to be listed. Approximately 200 wildlife species have been listed as threatened or endangered and about 107 species are being considered for classification. Every new listing increases our responsibilities for consultation. The potential impact of such a rapidly expanding list is difficult to assess, but we do know that the impact will be substantial. As other plant and animal species are listed or considered for listing, and as we continue to gain experience in section 7 consultation, we probably will find that we will have to make adjustments in our programs to accomplish the objectives of the act. We also may find it desirable to explore ways to simplify and streamline the consultation proc-

ess. One of the questions we have in that sense, Mr. Chairman, is in determining at which level of a program or activity to consult.

We recognize that all species are of equal importance. However, we must first concentrate our efforts to protect those habitats and influence those situations and human uses which are most critical to the survival of the species.

Another important aspect of the Endangered Species Act for which the Department of Agriculture has implementation responsibility is enforcement of the International Convention, which pertains to the importation and exportation of terrestrial plants. This activity is administered by USDA's Animal and Plant Health Inspection Service, or APHIS. The convention appendices now contain 9 complete families, 8 genera, and about 65 individual species. Plants most likely to be encountered in trade are American ginseng and species within the cacti, cycad, orchid, and tree fern families.

The role of the Department of Agriculture in the convention is to review import and export convention permits and certificates accompanying shipments of convention plants; determine that required documentation for shipments is present and accurate; cancel certificates accompanying shipments; direct questionable shipments to designated "rescue centers"; handle violations; and to participate in Scientific Authority activities. APHIS presently has offices and inspection responsibilities at 84 major U.S. ports of entry to intercept endangered terrestrial flora. Negotiations currently are underway with the U.S. Fish and Wildlife Service to formally establish ports of entry for endangered terrestrial flora. With the possibility that approximately 1,700 plants in the United States and numerous species from other countries could be added to the list of species to be protected under the convention, it is very probable that the Department's program responsibilities could increase drastically in this area. It is our intent to fully meet these responsibilities for the enforcement of the International Convention relating to plants.

In conclusion, we look forward to continued interagency cooperation in developing and strengthening the practical applications of this important national and international conservation policy, and we welcome the committee's continued support for the endangered species program.

We believe that the Endangered Species Act is a desirable and workable act. We all recognize that conflicts will continue to arise, but for the most part these can be resolved to the mutual satisfaction of all parties concerned. We do not feel it necessary, nor would we favor, any substantive change in section 7 of the act.

This completes my prepared testimony, Mr. Chairman. I would be happy to respond to your questions.

Mr. LEGGETT. Thank you very much, Mr. Secretary.

Your analysis makes the act appear to be workable and without conflict. How many people do you have in your Department that relate to the administration of this act?

Mr. CUTLER. In a general sense, we have 377 fish and wildlife biologists employed in USDA, most of whom are in the Forest Service. In a specific sense, I would have to ask my associates here.

Mr. LEGGETT. I would presume your fish and wildlife people are multi-discipline folks and they would spend some of their time with endangered species and some of their time with the game species and making other decisions?

Mr. CUTLER. That's correct.

Mr. JONES. I would say probably around 25 to 30 percent of our efforts within our wildlife program are presently directed to endangered species, and at least \$5 million of our appropriations are being used in that way.

Mr. CUTLER. This is Dale Jones, Mr. Chairman, Director of Wildlife for the Forest Service.

Mr. LEGGETT. I presume, in the timbering activities of the National Forests, you have not come nose-to-nose with the problem of critical habitat.

Mr. JONES. Yes, sir, we have.

Mr. LEGGETT. How do you meet that situation?

Mr. JONES. Mr. Chairman, we have come nose-to-nose in several areas with the Endangered Species Act. But we approach endangered species conflicts just as we would other species. Our biologists go into the areas where we are planning programs, like a timber sale, and they try to find out whether there is an endangered species present there. If there is, we do whatever is needed to modify the sale, so the habitat for that species is protected. Of course, this is what we do on our own, and since the consultation process is required wherever endangered species are involved, we would also initiate the consultation process with the Fish and Wildlife Service.

Mr. LEGGETT. You say you do whatever you reasonably can. Do you do every single thing possible to avoid disturbing the critical habitat?

Mr. JONES. Yes, sir, everything we possibly can to avoid—

Mr. LEGGETT. Has that ever aborted any timber sales?

Mr. JONES. Yes, it has aborted some. It has changed quite a few. The Bachman's Warbler is an example of where the sale has been changed. The biggest problem is the lack of known habitat requirements of some species.

For example, if we knew all the specific requirements for the Bachman's Warbler, it would be a simple matter of adjusting the sale so the species is protected. But right now we're just trying to maintain a diversity of habitat, hoping that a Bachman's Warbler is going to show up so we can find out what their specific requirements are.

Mr. LEGGETT. When a critical habitat is designated, is your agency advised?

Mr. JONES. Yes, sir. We are advised; as a matter of fact, we generally first make our recommendation to the Fish and Wildlife Service.

Mr. LEGGETT. Do you participate in drawing the lines?

Mr. JONES. We participate to the point that it's a recommendation. The only one who can really draw the lines and make the boundaries legal is the Secretary of the Interior.

Mr. LEGGETT. In your recommendations, do you take into consideration timber values?

Mr. JONES. No, sir. The only thing we consider, when endangered species is involved or a critical habitat, is the biological needs of the species.

Mr. LEGGETT. You have participated in several hundred of these consultations, as I understand it.

Mr. JONES. Several hundred informal. As you are aware, formal consultation process is relatively new. We have had about 40 of these official consultations since the regulations have been in effect. Now, that number is going to increase many fold, because the listed species are increasing. Right now we're obligated to consult whenever we may affect a species, whether it be positive or negative. So the number of consultations is going to increase considerably.

Mr. LEGGETT. You're looking in the eye of perhaps 1,700 additional plants being listed, and perhaps 200 or 300 additional animals of various types.

Considering the standards that we have in section 7 of the act, it says the Federal officials shall do every single thing possible to avoid conflict with the native habitat. Do you find any problem with that standard, vis-a-vis the potential future listings?

Mr. JONES. Without any question, if all 1,700 of those plants get listed, it's going to affect what we do. Right now we don't know what percentage of those plants will finally be listed. There is no question that with every new additional listing there could be more impact on other resource activities within the national forests and other public lands.

Mr. CUTLER. We are about to take a very positive step, administratively, to protect endangered species habitat, among other things, as we proceed with our Roadless Area Review and Evaluation, which is RARE II. One of the ways we're evaluating the 2,650 roadless areas we found throughout the National Forest System in an inventory process last year—it totals 62 million acres of national forest land—is to use wildlife habitat as one criterion by which to recommend future wilderness areas, along with ecosystem representation and land form representation.

Mr. LEGGETT. I've seen the way you draw your lines, though, and you keep a very healthy eye on where the timber is when you lay out your multiple-use forests.

Mr. CUTLER. Well, that's only logical in a sense——

Mr. LEGGETT. It's only logical to do that, but I can just see when you do that you're going to come eye-to-eye and nose-to-nose with this act sooner or later.

Mr. CUTLER. We don't have any problem with leaving heavy timber if it has endangered species in it. That's the law. As a matter of fact, it's our policy to try and protect the variety of forest types, the variety of ecosystems, including those that have heavy timber in them. So this is essentially the tipping factor that weighs heavily toward not logging that area.

Mr. LEGGETT. Does everybody in your Department feel exactly as you do?

Mr. CUTLER. No.

Mr. LEGGETT. Do you have any debate going on there, where some people might think a total nonweighing of the issue of 3,000

plants and animals, vis-a-vis the other purposes of your Department, is not necessarily and precisely reasonable?

Mr. CUTLER. The Forest Service has a very effective series of ways to get the word down to the field, so to speak, from Washington, through its various management directions, the Forest Service Manual, and so forth.

I would like to provide you, Mr. Chairman, Mr. Forsythe, and the committee, for your information, with a new management direction that just went from the Chief out to the field within the last couple of weeks, giving wildlife in general co-equal value with every other output to the national forest system, and specifically discussing the importance of endangered species in national forest management. We'll send that up to you.

[The material follows:]

U.S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D.C., May 24, 1978.

Re 2600 Wildlife.

To: Regional foresters, station directors, area directors, and WO staff directors.
Subject: Wildlife habitat management policy.

There is a need to strengthen the emphasis given wildlife and fish management in the Forest Service. This agency has made steady progress in wildlife and fish habitat management in recent years, but we have not moved fast enough or far enough in our efforts.

Dr. Cutler has publicly stated, on several occasions, the need for adequate attention to wildlife and fish in the U.S. Department of Agriculture activities and programs. To accomplish this commitment, he has directed the Forest Service to take needed action to assure that wildlife and fish achieves coequal status with other products of our land management. A copy of Dr. Cutler's policy direction is enclosed.

To meet the Department's and Forest Service's commitment to the wildlife and fish resource, the following policy statement, goals, and objectives will guide our future programs:

1. Wildlife will be emphasized in specific program direction.
2. Wildlife representation will be required on multidisciplinary teams that address issues affecting wildlife or fish.
3. We will adopt holistic management as the most acceptable wildlife philosophy and develop national standards that will insure its use.
4. Wildlife and fish goals and objectives will be spelled out in land management plans. Establish controls to insure on-the-ground compliance.
5. Review cooperative relations with State wildlife and fish agencies. Problems that surface should be addressed by putting together an action plan that attempts to reach accord.
6. Work with State wildlife agencies to insure all planning endeavors involving land and/or wildlife and fish species are coordinated.
7. Establish a goal for endangered and threatened plant and animal species that will call for their removal, where possible, from such status by improving, protecting, and managing their habitats.
8. We will establish a research program to fill in knowledge gaps of wildlife and fish habitat needs. To the extent possible, approach this on an ecosystem basis so that interactions between species and interactions between Forest activities and species can be determined.
9. By 1985, devise and adopt: (a) A uniform hierarchical habitat classification and assessment system; and (b) a storage and retrieval system for wildlife and fish and their respective habitat associations.

Some of the major problems I see in accomplishing fish and wildlife goals include the failure to have a good output measure and the lack of quality standards that can be used to measure accomplishment by the field. You should give these areas some special attention. It may also be possible that wildlife staffing in the Forest Service is out of balance with the need. You should keep in mind, however, that it may be possible to overcome manpower shortages and also improve State relations by finding ways to finance some of your wildlife and fish needs through State wildlife agencies.

I would like an accomplishment report on your progress in carrying out this policy by March 1, 1979.

R. A. RESLER
(For John R. McGuire, Chief).

Enclosure.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., April 14, 1978.

JOHN MCGUIRE,
Chief, Forest Service.

On March 20, in my address to the North American Wildlife and Natural Resource Conference in Phoenix, Arizona, I made several commitments regarding the U.S. Department of Agriculture's activities to insure that wildlife achieves adequate attention in our programs.

I wish to summarize these points for your attention.

1. Primary goal in the Department of Agriculture will be to insure that wildlife achieves coequal status with other products of our land management.

2. Our managers must state wildlife goals clearly in the land planning process prescribed by the National Forest Management Act. Achievement of these goals will require that wildlife management objectives be written and consequences described, and the wildlife prescriptions followed in timber sales and other resource activities.

3. Wildlife goals must be clearly stated in land management plans. These plans must be coordinated with State plans.

4. We must make sure that none of the activities we plan threaten the existence of plant and animal species in danger of extinction. Our objective will be to get such plant and animal species off the "endangered" list.

5. We will write goals and prescriptions for the National Forest portion of the National Wilderness Preservation System. These prescriptions will state how human interaction with other animals will be accounted for, how we will preserve unique wildlife habitat, and how we will protect wildlife gene pools which depend on wilderness habitat.

Please report to me on what action has been taken to implement these policy directions.

M. RUPERT CUTLER,
Assistant Secretary for Conservation, Research, and Education.

Mr. CUTLER. Basically, the guides that we will provide our field force will very specifically implement the mandate of the Endangered Species Act in our timber sales and other management practices.

Mr. LEGGETT. You see no problem whatsoever in the interfacing of your general activities and accommodating, too, the listing of these 2,000 or 3,000 species?

Mr. CUTLER. Oh, I think there will be problems when it comes to drawing the boundaries for the critical habitat. For example, we've got a question right now with the Fish and Wildlife Service over what is the so-called critical habitat for the grizzly bear; does it have to be the entire Northern Rockies, or can it be something smaller; and what does that mean as far as timber management is concerned?

Mr. JONES. There's another thing, Mr. Chairman, and that is our limited knowledge of how these species adapt to change. Their adaptability is very important, because establishment of a critical habitat does not say you will do nothing within the area.

Mr. LEGGETT. I understand.

Mr. JONES. One of the challenges before us is to find out how to do things and not disturb this habitat, at least to the extent it would be detrimental.

Mr. LEGGETT. Is it your general impression you could use timber in a critical habitat?

Mr. JONES. It depends on what the needs are. I am sure there are species that can tolerate logging. The grizzly bear is a good example. The grizzly bear needs some openings in timber. To stop timber cutting could be a problem for the grizzly.

Mr. LEGGETT. What if you had a lawsuit and you lost it?

Mr. JONES. Well, we'd lose some habitat. It could be possible.

Mr. LEGGETT. Are there any suits against the Forest Service at the present?

Mr. CUTLER. On this issue?

Mr. LEGGETT. Yes.

Mr. CUTLER. I don't know.

Mr. JONES. None that I know of, that are in the courts.

Mr. LEGGETT. Counsel says no.

Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman. And I thank you gentlemen for your appearance here.

Have you had an opportunity to at least look at the new regs dealing with the whole area of EIS and the agency relationships?

Mr. CUTLER. Yes, we have.

Mr. FORSYTHE. As I look at the regulations, they appear to be trying to develop some uniformity throughout all the agencies to increase the effectiveness of the interchange between agencies as we come face-to-face with all of the various impacts that are involved in this process.

Would you view that as a step forward, perhaps, in terms of being able, to keep the interagency relationships moving forward with more precision and perhaps easier?

Mr. CUTLER. It's my opinion that over the last year the relationships between the agencies involved have become closer. The working relationships have become more effective on such fronts as the Water Resources Council, as well as the Council on Environmental Quality.

We have worked together to develop such things as the flood plain guidelines and water policies, and the revised—well, the former guidelines and now the regulations that the Council on Environmental Quality will promulgate to give us all a standard set of groundrules under which to implement the National Environmental Policy Act.

I think we're becoming more mature in our interpretation of NEPA. Environmental impact statements very likely will be the order of the day as we approach questions with regard to major actions of agencies, including the Forest Service that will have an impact on endangered species.

Mr. FORSYTHE. An overlap on endangered species seems to me to be very much there, and very proper, and it will probably be aided by the uniformity this is trying to develop.

Mr. CUTLER. I would agree.

Mr. FORSYTHE. One other question: You mentioned the Forest Service does not have the ability to acquire habitat. I was just wondering where your jurisdiction falls short.

Mr. CUTLER. I think it's an important question, and I'm glad we've had a chance to talk about it this morning.

Under existing law, as the Secretary of Agriculture is authorized to acquire lands within the national forest system for timber pro-

duction and watershed purposes, and to use moneys from the land and water conservation fund to acquire lands for wilderness and outdoor recreation. While important wildlife lands can sometimes be acquired in connection with the acquisition of lands for other purposes, the Secretary of Agriculture does not have specific authority to acquire lands for the protection and management of wildlife, or expressly for the conservation of endangered or threatened species.

A good example is the Hell Hole Cave, located on private land within the Monongahela National Forest in West Virginia, a cave identified as critical habitat for the endangered Indiana bat. We have been unable to acquire the cave, even though the area is seriously threatened by mining activities, and it's within the forest boundaries.

Another example involves certain tracts within the Los Padres National Forest in southern California identified for acquisition in the California condor recovery plan. Several of these tracts have been purchased and donated to the Forest Service by conservation organizations, but the remaining tracts remain in private ownership because we can't acquire them. And we could cite several other examples where the inability to acquire critical lands is a problem.

Section 5 of the Endangered Species Act does provide authority to the Secretary of the Interior to acquire lands for the purposes of the act. Although it would be possible for the Secretary of the Interior to acquire lands within the national forest system, this has not proved to be a very workable arrangement, for several reasons.

First, it is difficult for the Department of Interior to reprogram their priorities to include our needs, when their acquisition program is already overextended.

Second, this arrangement would result in the establishment of some small enclaves of national wildlife refuge system lands within the national forest system, which in turn causes two agencies to exercise administrative responsibilities over essentially the same areas. Neither Department would be comfortable with that situation.

Because this problem encompasses the entire wildlife area, we plan to develop a separate legislative proposal which would seek to provide the Secretary of Agriculture authority to acquire lands for general wildlife purposes, including the protection of threatened or endangered species, within the national forest system.

Mr. FORSYTHE. Well, that last phrase is really the key, it is enclaves within the system that you're dealing with and that is the concern. There is no suggestion that it's an expansion of the national forest system, per se, is there?

Mr. CUTLER. No; there is no interest in expanding the national forest system for this purpose. But obviously, within the Multiple Use, Sustained Yield Act and more recent authorities, wildlife has an equal value. We have just fallen behind in the scope of our statutory authorization for land acquisition.

Mr. FORSYTHE. Thank you, and thank you, Mr. Chairman.

Mr. LEGGETT. Mr. Oberstar?

Mr. OBERSTAR. Mr. Cutler, you raised the question of the problem of consultation—I'm not quite sure with whom and at what level.

You consult with the Fish and Wildlife Service. How does that occur? How do you get into that kind of problem?

Mr. CUTLER. I would ask Dale Jones to respond.

Mr. JONES. An example of what they're referring to, Mr. Oberstar, is the RARE II process. There are several million acres of land and some decisions are going to have to be made as to what portion of these land will be recommended for wilderness; what portion will be removed completely from wilderness consideration, or what portion would be treated within the land management planning process. The law, the Endangered Species Act, and the regulations call for us to consult with the Fish and Wildlife Service on any actions that may affect endangered species. The problem involved in this particular area is that either decision, to recommend an area for wilderness or to take it out of consideration, is going to have some effect on the long-range ecological effect of that land which could affect one of these species.

Therefore, we feel we have to consult. The problem of whether we consult at the Washington or regional level is the only consideration at this point. If the Fish and Wildlife Service can handle it all as one job, then it could be handled from the Washington office. But if each species has to be reviewed individually, and they've got to make a very detailed study of what the ecological effects would be on that species, then the consultation will probably have to be handled at the regional levels.

Mr. OBERSTAR. Let me ask Mr. Cutler: Have you ever called Lynn Greenwalt and said, "Look, let's get together and let's discuss how we're going to run this program"?

Mr. CUTLER. I would be more apt to call Bob Herbst. I don't think we've got that many problems. John McGuire and Lynn Greenwalt and the top staffs get together for lunch once a month. I really don't see a major problem except that we have such a large challenge here with the 62 million acres involved in RARE II that we had better get organized pretty quickly.

Mr. OBERSTAR. I should think it wouldn't be too much of a problem to consult. That's the key to the success of this legislation, where you people can get together over there.

Mr. CUTLER. We had a meeting in my office with the representatives of four Interior Department agencies on our joint approach to this whole wilderness issue just last week. We're working on it quite closely. The endangered species piece of the action, though, is something I haven't personally addressed. We'll see that it gets appropriately handled.

Mr. OBERSTAR. When you folks don't get together and agree on a program and plan of action, then problems come up. You get members of Congress saying, "Hey, we've got to change the act." If we have a mechanism in the act that is capable of working and succeeding, then it's up to you folks to make it work or someone will say, "Change the act."

Mr. JONES. We have already talked with the Fish and Wildlife Service and are working with them on this matter. We don't consider it a major problem.

Mr. OBERSTAR. You've got the habitat responsibility and they've got the species responsibility, so somewhere there you two agencies have got to get together and agree on how you're going to protect.

Mr. CUTLER. We have shown how we can do it with the channelization guidelines, with the SCS and Fish and Wildlife Service agreeing on those. We'll do the same thing on RARE II.

Mr. OBERSTAR. Thank you, Mr. Chairman.

Mr. LEGGETT. Thank you, Dale, and Mr. Secretary, very much. Counsel has a question.

Mr. THORNTON. Mr. Secretary, are you familiar with the correspondence to the chairman of the subcommittee from the Forest Service regarding the Endangered Species Act?

Mr. CUTLER. I can't say that I am.

Mr. JONES. Go ahead.

Mr. THORNTON. You testified that a number of timber leases had been modified because of critical habitat designations, and yet those are not referenced in this correspondence.

Is there a reason for that?

Mr. CUTLER. It wouldn't be timber leases, but timber sales.

Mr. JONES. You mean in our letter to you the answer was, we had not had any modifications in timber sales?

Mr. THORNTON. That's correct.

Mr. JONES. Well, the red-cockaded woodpecker I think was involved at this point in time and they're having modifications there. However, the modifications for the red-cockaded woodpecker really were in effect even before the Endangered Species Act. We were trying to do something for that species prior to the act.

Mr. CUTLER. The implication of the chief's letter to the chairman may be that the original Forest Service timber management plan provided the kind of protection of endangered species that was required, so that the sale did not have to be modified subsequently.

Mr. THORNTON. How was the sale modified?

Mr. CUTLER. We were just saying, for example, in Texas, in the red-cockaded woodpecker habitat, that the Forest Service has taken into account the need to provide a buffer area around known nesting habitats, so there would be no conflict between the timber sales and the birds.

Mr. THORNTON. So, in effect, the timber sales are going forward then?

Mr. CUTLER. Yes, but not in conflict with the endangered species.

Mr. THORNTON. I wanted to clarify that the timber sale hadn't been abrogated and modified, that they are going forward.

Now, in the correspondence you listed a couple of instances where there has been some conflicts with critical habitat designations. One of those is with the designation of critical habitats for the California condor in Los Padres National Forest. These designations apparently impacted on two water resources management dams.

Do you know the nature of that conflict?

Mr. CUTLER. It could be the Soil Conservation Service—

Mr. JONES. No—I don't think I can respond specifically.

Could you respond to that, Jerry? This is Jerry McIlwain, my endangered species specialist.

Mr. McILWAIN. Yes, there is a water development project that is proposed to be developed on the edge of a condor critical habitat in California now. We are currently in consultation with the Fish and Wildlife Service on this project, and the major item of concern in

this project is whether any type of human development could possibly have an adverse impact on the California condor. Although this project is right on the very edge of the habitat, we are trying to find out now whether it will have an adverse impact.

Mr. THORNTON. So a decision hasn't been made as to preventing the construction or operation of that particular project?

Mr. MCLWAIN. No, it hasn't been made.

Mr. THORNTON. The other conflict included the designation of critical habitat for the Indiana bat. Could you explain what the nature of the conflict there is?

Mr. JONES. This is the problem where we could not obtain the land where the Indiana bat was involved, despite the fact the cave is in a national forest. We have no authority to purchase that land for the bat.

Mr. CUTLER. I think there may be another conflict that I can recall from previous exposure to some Forest Service environmental impact statements regarding the development of the cave in Arkansas, in which the Indiana bat habitat was involved, I think there was a question addressed in the environmental statement regarding the trade-off between recreation development of this cavern and the protection of the Indiana bat habitat. It is that sort of thing that we do bump heads on with the purposes of this act.

Do you recall that, Dale?

Mr. JONES. I'm not familiar with the situation.

Mr. CUTLER. We can provide you with more information for the record.

[The material follows:]

DEVELOPMENT OF BLANCHARD SPRINGS CAVERNS

Blanchard Springs Caverns is an extensive cave on the Ozark-St. Francis National Forest in Arkansas. Portions of the cave are being developed for intensive public use.

Development of Blanchard Caverns started in 1965, long before the Endangered Species Act and the official designation of Indiana and Gray bats as endangered species.

Since that time, small numbers of Indiana bats (never more than an estimated 200) have occupied the cave in winter hibernation. Larger numbers of Gray bats have inhabited it in both winter and summer, the largest recorded number being 10,000 in the summer of 1971. Usually, there are less than 5,000. The wintering colony usually located near the natural entrance and numbered about 4,000.

These bat populations have diminished, as expected, with development and operation of the caverns. However, since tour operation began, either one or both species have been discovered in six (6) nearby caves in numbers of 1 to 400 individuals, and it is believed that most of Blanchard's endangered bats have moved to other suitable habitats as predicted by Dr. Michael Harvey, Ecological Researcher for Memphis State University, and as was stated in the EIS prepared by the Forest Service.

Approximately three (3) miles of the caverns remains in a natural state and some of these bats may have moved into these more remote areas. According to Dr. Harvey's latest report on the Gray bat population of Bonanza Cave, a gated cave 15-20 miles removed, this one has increased somewhat over the past few years to an estimated 175,000 bats.

At Dr. Harvey's suggestion, the Forest Service plans to fence and/or gate three of the nearby caves inhabited by endangered bats.

In summary, after the passage of the Endangered Species Act, the completion of development in Blanchard Caverns was not considered to contribute to the further endangerment of Indiana and Gray bats. Blanchard Springs Caverns has not been declared as critical habitat, to date.

Mr. THORNTON. Have you had any activities that actually have been stopped cold as a result of the Endangered Species Act?

Mr. JONES. The only thing I can think of—when you say “stopped cold”, we are not proceeding with part of the sale on the Bachman’s warbler area. There is a part of that sale that will not be cut, because we’re after diversity at this site, including old-growth timber. So I would say a part of that sale has been stopped.

The Ion [phonetic] Swamp area in South Carolina——

Mr. THORNTON. How many acres are we talking about?

Mr. JONES. Do you know, Jerry?

Mr. McILWAIN. 7,000.

Mr. JONES. In the Ion Swamp, but not 7,000 acres totally stopped. I don’t know what the acreage is. We could supply that to you if you like.

Mr. THORNTON. But it’s going to be less than 7,000?

Mr. JONES. The acreage, that would be totally stopped, yes.

Mr. THORNTON. Is it possible to pick up some of that acreage in another area where it won’t be impacting on the species?

Mr. JONES. You’re referring to the timber?

Mr. THORNTON. Yes.

Mr. JONES. Yes, I think so, as long as it fits within the sustained yield management plans of the forest.

Mr. THORNTON. You have suggested that there be a mediation procedure in the act, in addition to the existing consultation process. Apparently this was used in the Bachmen’s warbler instance.

Would you suggest there be legislation to implement a mediation process?

Mr. CUTLER. We don’t suggest there be legislation to do that, but I will observe that the Forest Service has used forums of public involvement, including mediation, in developng its land use plans.

As a matter of fact, we are entering into a contract this summer with an organization known as Resolve. I believe it’s headquartered in Aspen, Colo. It’s a professional environmental mediation firm to test this mode of conflict resolution, looking at our RARE II areas in the State of Colorado. So the Department of Agriculture is testing mediation as one form of public involvement leading to the development of an apparent consensus in a controversial area.

Mr. THORNTON. I have one further question. The Botanical Society of America testified that in their opinion plants should receive less protection than animals under the act.

Do you concur in that judgment, that maybe there should be some special process for plants?

Mr. CUTLER. I share your surprise, although I have had folks use this hypothetical question on me—“What do you do when you find an endangered species of animal eating an endangered species of plant?” [Laughter.]

Dale, do you have a biological response to that question?

Mr. JONES. It seems to me the act itself addresses that to some extent by not addressing plants and animals separately.

Mr. THORNTON. The question is, should we have a modification of section 7 and distinguish between plants and animals?

Mr. JONES. I would not recommend a change be made. It gets down to what section 7 calls for regarding flora and it seems to me we have to protect all species, whether it be animal or plant.

Mr. THORNTON. Aren’t plants easier to maintain, easier to be transplanted and the like?

Mr. JONES. Sure. But, you see, that's one of the things about section 7—it doesn't stop you from doing things that are not detrimental to an endangered or threatened species. With consultation we can do anything that's needed.

Mr. CUTLER. The critical point is not whether or not the species should be protected, but what kinds of human activities can be done that don't adversely affect the species. There are many species where you can do a number of things in the habitat without adversely affecting them.

We don't want to find ourselves back in the mentality of the turn of the century, where we set up preserves, sanctuaries, which we left alone and found that we created many problems by so doing, because many species require early stages of vegetation which is a result of human activity.

Mr. LEGGETT. The question we sent to the Department dated November 3, 1977, if that is not in some other record, it will be included at this point in our record here, including your new revised—do you have new revised guidelines?

Mr. CUTLER. Yes, we do—new policy directions.

Mr. LEGGETT. All right. If you will provide us with copies of those, those will be included, also, provided they're not too voluminous.

Mr. Forsythe?

Mr. FORSYTHE. Mr. Chairman, we have a couple of additional questions we may submit.

Mr. LEGGETT. We will submit additional questions, and if you will provide the answers, that will be very, very helpful.

Thank you very much.

Mr. CUTLER. Thank you, sir.

[The following was received for the record.]

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

WO

REPLY TO: 2630 Habitat

MAR 16 1978

SUBJECT: Interagency Cooperation Regulations Under the
Endangered Species Act

TO: Regional Foresters, Station Directors, and Area Directors

Here is Forest Service direction for implementing the Interagency Cooperation Regulations printed in the FEDERAL REGISTER, Vol. 43, No. 2 - Wednesday, January 24, 1978. These regulations are binding on the Forest Service and require consultation with the Fish and Wildlife Service or National Marine Fisheries Service on every program or activity which "may affect" a threatened or endangered species.

This direction applies to NFS, Research, and S&PF. It will not suffice completely for S&PF. Each S&PF program must be evaluated and the possibility of cooperatively drafting counterpart regulations with the Fish and Wildlife Service considered.

This direction will be consolidated with other threatened and endangered species direction and placed in the Manual in the near future.

Please note that the FEDERAL REGISTER material is typed single-spaced, and the Forest Service direction double-spaced.

Thomas C. Nelson

THOMAS C. NELSON
DEPUTY CHIEF

Enclosure

Limited Distribution

This section establishes Forest Service direction for implementation of Secretary of the Interior's Regulation 50 CFR 402, Interagency Cooperation under Section 7 of the Endangered Species Act of 1973, with emphasis on formal consultation with the Fish and Wildlife Service. It also addresses the determination of critical habitat.

Formal consultation is a mandatory requirement of the Endangered Species Act, as affirmed by judicial review. Forest Service units will comply with the spirit and intent of these regulations. The text of the regulations as promulgated by the Secretary of the Interior are presented first, followed by an explanation of procedures which the Forest Service will follow in complying with each section or subsection of the regulation.

The consultation procedure described herein will be used until direction is issued for the preparation of comprehensive species management plans, a process which is intended to reduce the consultation workload.

PART 402-INTERAGENCY COOPERATION-ENDANGERED SPECIES ACT OF 1973

Sec.

402.01 Scope.

402.02 Definitions.

402.03 Applicability to previously initiated actions.

402.04 Consultation.

402.05 Determination of critical habitat.

AUTHORITY: Endangered Species Act of 1973

(16 U.S.C. 1531 et seq.)

3. Add §§ 402.01 through 402.05 of Part 402, Chapter IV, to read as follows:

402.01 Scope.

This part interprets and implements section 7 of the Endangered Species Act of 1973 (hereinafter the Act). Section 7 (16 U.S.C. 1536) applies to all listed species of fish, wildlife, or plants and imposes three burdens upon the Federal agencies. First, it directs them to utilize their authorities to carry out conservation programs for listed species. Such affirmative conservation programs must comply with any applicable permit requirements of 50 CFR Parts 17, 220, 222 and 227 for listed species and should be fully coordinated with the appropriate Director. Second, it requires every Federal agency to insure that its activities or programs in the United States, upon the high seas, and in foreign countries will not jeopardize the continued existence of a listed species. And third, section 7 directs all Federal agencies to insure that their activities or programs do not result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service and the National Marine Fisheries Service share responsibilities for the Act. A Federal agency can determine which Service to initiate consultation with by scanning the list of species under the jurisdiction of the National Marine Fisheries Service located at 50 CFR 222.23(a) and 227.4. If the Federal agency's activity or program may affect a listed species which is cited in 50 CFR 222.23(a) or 227.4, then the agency shall initiate consultation with the National Marine Fisheries Service. If the listed species is not cited in 50 CFR 222.23(a) or 227.4, the Federal agency shall initiate consultation with the Fish and Wildlife Service.

402.02 Definitions.

"Activities or programs" means all actions of any kind authorized, funded, or carried out by Federal agencies, in whole or in part, examples of which include, but are not limited to: (1) actions intended to conserve listed species or their habitat; (2) the promulgation of regulations; (3) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (4) actions directly or indirectly causing modifications to the land, water, or air.

"Critical habitat" means any air, land, or water area (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species) and constituent elements thereof, the loss of which would appreciably decrease the likelihood of the survival and recovery of a listed species or a distinct segment of its population. The constituent elements of critical habitat include, but are not limited to: physical structures and topography, biota, climate, human activity, and the quality and chemical content of land, water, and air. Critical habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion.

"Destruction or adverse modification" means a direct or indirect alteration of critical habitat which appreciably diminishes the value

of that habitat for survival and recovery of a listed species. Such alterations include, but are not limited to those diminishing the requirements for survival and recovery listed in §402.05(b). There may be many types of activities or programs which could be carried out in critical habitat without causing such diminution.

"Director or Regional Director" means the Director or one of the Regional Directors of the United States Fish and Wildlife Service or the National Marine Fisheries Service, as appropriate, for purposes of consultation.

"Federal agency" means each authority of the Government of the United States except for the Congress, the Courts of the United States, the Governments of the Territories, Commonwealths, or possessions of the United States, or the Government of the District of Columbia.

"Jeopardize the continued existence of" means to engage in an activity or program which reasonably would be expected to reduce the reproduction, numbers, or distribution of a listed species to such an extent as to appreciably reduce the likelihood of the survival and recovery of that species in the wild. The level of reduction necessary to constitute "jeopardy" would be expected to vary among listed species.

"Listed Species" means any species of fish, wildlife, or plant which is designated as endangered or threatened under the Act.

"Recovery" means improvement in the status of listed species to the point at which listing is no longer required.

"Activities or programs" include all actions, authorized, funded, or carried out by the Forest Service, whether in NFS, Research or S&PP, including those planned or implemented for the direct benefit of listed species.

Critical habitat is as defined in 402. Since "critical habitat" has legal implications, the Forest Service will use the term "critical habitat" to apply only to habitats officially determined as such by action of the Secretary. The term "essential habitat" will be used to define areas possessing the characteristics of critical habitat without having been so determined by the Secretary.

Destruction or adverse modification - Units are cautioned that all actions which may result in the "destruction or adverse modification" of occupied habitat, or of suitable unoccupied habitat needed for the recovery of the species, must be reviewed to determine the effects of such actions whether or not the habitat in question has been determined to be critical habitat by the Secretary.

Additional Definitions for Forest Service Use in the Interpretation of These Regulations

Aggregate Consultation - A single consultation on a logical grouping of projects, activities, or programs of a similar nature which are expected to have a similar effect on one or more species or their habitat.

Biological Opinion - An official report by the Director of the Fish and Wildlife Service or the National Marine Fisheries Service, issued in response to the formal request of a Federal agency for consultation under the provisions of these regulations and representing the Government's position as to the expected effects of a proposed action upon the conservation of a listed species or its habitat.

Review - The initial effort of a Federal agency to determine the nature and extent of the possible effects, if any, upon listed species which may result from a planned or ongoing action. For the purpose of these regulations,

any such review conducted must be competent, and must result in a decision that the action in question will affect, may affect, or will not affect a species or its habitat.

Habitat - The habitat of a listed species which is presently occupied by the species or is suitable unoccupied or potentially suitable unoccupied habitat within its historic range.

May Affect - An action which "may affect" a listed species is one which has an apparent direct or indirect relationship to the conservation and recovery of the species.

For the purpose of implementing these regulations, actions which may affect a listed species include:

- any action, including but not limited to, habitat development and research, which will directly benefit a listed species.

- any action which will directly alter, modify or destroy critical habitat or essential habitat, or render occupied habitat unsuitable for use by the species, or otherwise affect productivity, survival or mortality.

- any action which will directly result in the "taking of a listed species" as defined in 50 CFR, Part 17, Subpart A, Section 17.3.

- any action involving the acquisition or disposal of land which is occupied habitat or suitable unoccupied habitat.

402.03 Applicability to previously initiated actions.

Section 7 applies to all activities or programs where Federal involvement or control remains which in itself could jeopardize the continued existence of a listed species or modify or destroy its critical habitat.

402.04 Consultation.

(a) Initiation. (1) It is the responsibility of each Federal agency to review its activities or programs and to identify any such activity or program that may affect listed species or their habitat. Reviewing Federal agencies may obtain advice from the Service, but this is supplemental to, and not a substitute for, the formal consultation process set forth in this Part. Where a Federal agency funds or authorizes an activity or program to be carried out by a non-Federal entity, the Federal agency shall initiate the formal consultation process and not the non-Federal entity.

(2) If a Federal agency decides that its activities or programs will not affect listed species or their habitat, consultation shall not be initiated unless requested by the Service.

(3) When a Federal agency identifies activities or programs that may affect listed species or their habitat, the agency shall convey a written request for consultation with available information to: the Regional Director for the Region where the activity or program is or will be carried out; or to the Director or Regional Director for the Region where the Federal agency is headquartered, if more than one Region is involved; or to the Director if foreign countries or the high seas are involved. In addition, if foreign countries or the high seas are involved, a copy of the request for consultation and all subsequent correspondence shall be forwarded to the Secretary of State c/o the Director, Office of Environmental Affairs. Any request for consultation may encompass, subject to the approval of the Director or Regional Director, a number of similar individual activities within a given geographical area, administrative unit, or segment of a comprehensive plan. Until consultation has been completed and a biological opinion issued, good faith consultation shall preclude a Federal agency from making an irreversible or irretrievable commitment of resources which would foreclose the consideration of modifications or alternatives to the identified activity or program.

(4) In addition, the Director or Regional Director will request initiation of consultation if he identifies any activity or program of a Federal agency that has not received prior consultation and that may affect listed species or their habitat.

(5) Informal consultation may be initiated at the field level between the Service and the Federal agencies or their authorized representatives. Such informal consultation is supplemental to, and not a substitute for, the formal consultation process set forth in this part.

The Forest Service is responsible for conducting a competent review of each program or activity which it funds, authorized or carries out and for determining whether it may affect a listed species. Ongoing programs or activities must be reviewed as well as those in the planning stage.

The Forest Service may decide, after a competent review, that an activity or program will not affect listed species or their habitat. If that decision may prove controversial or otherwise sensitive, relevant facts and conclusions should be documented.

If the Forest Service determines that a program or activity may affect a listed species, the Regional Forester, Station Director or Area Director will request, in writing, formal consultation with the Regional Director, Fish and Wildlife Service or National Marine Fisheries Service as appropriate. If in doubt on the issue of "may affect," initiate consultation. Authority to request consultation may be delegated to the Forest Supervisor. Informational copies of all requests for formal consultation will be sent to the Washington Office.

It has been determined by the Secretary of the Interior that the concept of mitigation does not apply to actions which would further contribute to the endangerment of a listed species. If the Forest Service has determined that an action may affect a listed species, consultation cannot be avoided by planned mitigation for that action.

With the initial request for consultation, send all relevant information and, where possible, pertinent management interpretations related to the probable long- and short-term effects of the program or activity on the species or its habitat.

If insufficient information is supplied with the initial request, the Fish and Wildlife Service or NMFS may, within 60 days, request that adequate information be supplied. The Forest Service would then be responsible for obtaining such information and supplying same to the FWS, whereupon a new 60-day period for response would begin, thereby unnecessarily delaying the subject program or activity. When necessary information may require time-consuming studies to acquire, an agreeable time frame should be negotiated with the FWS or NMFS.

Information supplied with a request for consultation should be coordinated with the State agency responsible for endangered and threatened species.

Requests for consultation should be made as early in the planning stages of a program or activity as possible.

To the fullest extent possible, consult at the highest program or activity level at which individual impacts on endangered species can be identified and evaluated; and for which the effects can be expected to remain consistent. Conduct an aggregate consultation whenever multiple projects or activities lend themselves to grouping because of similar effects on the species or habitat.

Consultation must be conducted in good faith. Prior to the completion of consultation, any irreversible or irretrievable commitment of resources will be avoided which might foreclose exercising alternatives to the identified activity or program.

The FWS may request that the Forest Service initiate consultation on programs or activities not previously consulted upon. The Forest service will honor all such requests, even if it had previously made the decision that the program or activity would not affect listed species.

Suggested priority for consultation by category of Forest Service actions are:

<u>Priority</u>	<u>Action</u>
1	Ongoing activities on National Forest System lands within determined critical habitat.

- 1 S&PF programs, which may affect cost-share funds expended on-the-ground in critical habitat.
- 1 I&D projects which may affect species.
- 2 Ongoing activities within occupied habitat not determined to be critical habitat.
- 2 S&PF technical assistance programs which may affect a species.
- 2 Forest Service Research in Endangered Species.
- 3 Forest service habitat improvement, surveys and studies for benefit of the species, with or without a recovery plan.
- 3 Activities or programs in the planning stages.
- 4 Actions or programs for which coordination is already developed.

Informal consultation between the Forest Service, Fish and Wildlife Service, the States, and other interested parties is encouraged. Informal consultation, however, is not a substitute for formal consultation under these regulations.

(b) Form. (1) Consultation under section 7 may be consolidated with interagency cooperation required by other statutes, such as the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) or the National Environmental Policy Act (42 U.S.C. 4321 et seq.). The satisfaction of the requirements of these other statutes, however, does not in itself relieve a Federal agency of its obligation to comply with the consultation procedures set forth in this part.

(2) When particular programs or activities involve more than one Federal agency, these agencies may, upon notification of the Director or Regional Director, fulfill their consultation responsibilities through a single lead agency. Factors relevant in determining an appropriate lead agency include the time sequence in which the agencies become involved, the magnitude of their respective involvement and their relative expertise with respect to the environmental effects of the activity or program.

Consultation under Section 7 must be specifically identified as such.

Routine review of NEPA documents or documents prepared under other statutes does not constitute consultation.

NEPA documents and documents prepared under other statutes may be the basis for consultation if impacts upon the species are adequately identified in them. Environmental Impact Statements for land management plans, which are primarily land allocation documents, are generally too broad to provide a basis for consultation.

When routine programs or activities involve the Forest Service and another Federal agency, the Forest Service will negotiate for the lead in consultation if the action would normally be authorized on National Forest System lands by lease, permit, easement, or cooperative agreement. When the action is specifically authorized by Congress (such as dam and reservoir projects), the constructing agency should initiate consultation.

(c) Assistance from the Service. It is the primary responsibility of each Federal agency requesting consultation to conduct the appropriate studies and to provide the biological information necessary for an adequate review of the effect an identified activity or program has upon listed species or their habitat. To the extent it is available, the Service will upon request provide all relevant data and reports, personnel, and recommendations for additional studies or surveys, but the Service is not obligated to fund any such additional studies or surveys.

(d) Assistance from other sources. Federal agencies may seek assistance from any source to obtain the biological information necessary for a review of the effect an activity or program has upon listed species or their habitat. Such assistance may include, but is not limited to, that obtained by contract or required by regulations of the Federal agency. Although it may authorize a non-Federal representative to participate in the consultation process pursuant to approved counterpart regulations, the ultimate responsibility for compliance with the procedures of this section remains with the Federal agency and cannot be delegated by it.

(e) Threshold examination. Upon receipt of a written request for consultation, the Director or Regional Director will conduct a threshold examination of the identified activity or program. A threshold examination will include a review of available information and may include an on-site inspection of the area.

(1) If, in the opinion of the Director, an identified activity or program will promote the conservation of listed species, the appropriate Federal agency shall be notified in writing within 60 days after consultation is initiated, and additional section 7 consultation shall be unnecessary. The Service, to the extent feasible, will assist in carrying out such programs if requested by the Federal agency.

(2) If an identified activity or program is not specifically for the conservation of listed species, but the Director or Regional Director concludes from the threshold examination that the activity or program is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the appropriate Federal agency shall be notified in writing within 60 days after consultation is initiated and further section 7 consultation shall be unnecessary.

(3) If an identified activity or program is not specifically for the conservation of listed species and the Director or Regional Director concludes from the threshold examination that the activity or program is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the appropriate Federal agency shall be notified in writing within 60 days after consultation is initiated and further section 7 consultation shall be unnecessary.

(4) The biological opinions issued pursuant to subparagraphs (1), (2) and (3) of this subsection shall be accompanied by a statement of the facts and documentation on which they are based and may include recommendations for modifications in the identified activity or program which would enhance the conservation and protection of a listed species or its critical habitat. Such opinions will be released pursuant to the Freedom of Information Act.

A biological opinion issued by a Director or Regional Director pursuant to Section e, 4 represents the Government's position on the action relevant to enforcement of the Endangered Species Act and must be so regarded in any subsequent actions relevant to the activity or program consulted upon.

1. If the biological opinion concludes that the activity or program consulted upon will promote the conservation of a listed species:

- Proceed with the proposed action, after first obtaining any requisite State or Federal permits.

- Utilize the assistance of the Fish and Wildlife Service as appropriate.

- Keep all concerned agencies advised of progress.

2. If the biological opinion concludes that the activity or program consulted upon is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat:

- Proceed with the proposed action.

- Monitor its progress to be certain that the activity or program is carried out as proposed in the consultation, and that effects upon the species are as predicted.

- If the effects are not as expected, it may become necessary to reinitiate consultation and delay further action pending receipt of a revised biological opinion.

3. If the biological opinion concludes that the activity or program consulted upon is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, four alternative courses of action are possible.

- Halt the action;

- Defer the action pending some anticipated change in the situation or the status of the species which might permit continuing with activity or program;

- Modify the action as recommended or as otherwise compatible with conservation of the species; or,

- Proceed in spite of the adverse opinion. This alternative is not recommended. Proceeding contrary to the biological opinion incurs the strong probability of a lawsuit.

Judicial review of an activity or program done contrary to the biological opinion is highly probable. A decision to proceed with an action in contradiction to the biological opinion and recommendations of the Fish and Wildlife Service or NMFS may be justified only for two reasons:

1. Substantial and unresolvable technical differences between the Forest Service's evaluation of the biological effects of the action and those of the FWS or NMFS as expressed in the biological opinion.
2. The existence of social, economic, or environmental concerns of such national significance as to warrant the apparent risk to the species that would be entailed by carrying out the action.

Regional Foresters, Station Directors, and Area Directors may approve a decision to override an unfavorable biological opinion only on the basis of technical concerns which are clearly biological in scope and which could not be resolved through earnest consultation and a thorough review of all available biological and ecological information.

The Chief may approve a decision to override a biological opinion for sufficient social, economic, or environmental reasons.

(f) Further consultation. If the Director or Regional Director determines as a result of the threshold examination that insufficient information exists to conclude that an identified activity or program

is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the Federal agency will be so notified in writing within 60 days after formal consultation is initiated. The Federal agency, with assistance as feasible from the Service and other sources of expertise, shall then obtain additional information and conduct, as appropriate, biological surveys or studies to determine how the activity or program may affect listed species or their critical habitat. Within 60 days of receipt of adequate information and documentation, unless special circumstances require negotiation of a longer period, the Service will end consultation by issuing a biological opinion pursuant to the provisions of paragraphs (e) (1), (2), (3), and (4) of this section as appropriate.

(g) Responsibilities after consultation. Upon receipt and consideration of the biological opinion and recommendations of the Service, it is the responsibility of the Federal agency to determine whether to proceed with the activity or program as planned in light of its section 7 obligations. Where the consultation process has been consolidated with interagency cooperation required by other statutes such as the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the final biological opinion and recommendations of the Service shall be stated in the documents required by those statutes.

(h) Reinitiation. Consultation shall be reinitiated by the Service or by the Federal agency if: (1) New information reveals impacts of the identified activity or program that may affect listed species or their habitats;

(2) The identified activity or program is subsequently modified, whether as a result of a biological opinion issued after consultation or not; or

(3) A new species is listed that may be affected by the identified activity or program.

Reinitiate consultation by formal written request if:

1) Substantial new information reveals effects not previously considered in the biological opinion.

2) The program or activity is modified in a manner which renders the biological opinion inappropriate.

3) A new species is listed that would be affected by the activity or program or a listed species not previously known is found in the habitat or area under consideration.

If the Regional Director or Director requests that consultation be reinitiated the request shall be promptly honored.

(i) Counterpart regulations. The consultation procedures set forth in this section may be superseded for a particular Federal agency by joint counterpart regulations drafted by that agency and the Fish and Wildlife Service and the National Marine Fisheries Service. Such counterpart regulations shall be published in the FEDERAL REGISTER as proposed and final rulemakings and shall provide for a minimum 60-day period for public comment.

402.05 Determination of critical habitat.

(a) Procedure. Whenever deemed necessary and appropriate, the Director shall determine critical habitat for a listed species. After exchange of biological information, as appropriate, with the affected States and Federal agencies with jurisdiction over the lands or waters under consideration, the Director shall publish proposed and final rulemakings, accompanied by maps and/or geographical descriptions in the FEDERAL REGISTER. Comments of the scientific community and other interested persons will also be considered in promulgating final rulemakings. The modification or revocation of a critical habitat determination shall also require the publication in the FEDERAL REGISTER of a proposed and final rulemaking with an opportunity for public comment.

(b) Criteria. The Director will consider the physiological, behavioral, ecological, and evolutionary requirements for the survival and recovery of listed species in determining what areas or parts of habitat (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of the species) are critical. These requirements include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

- (3) Cover or shelter;
 - (4) Sites for breeding, reproduction, or rearing of offspring; and generally,
 - (5) Habitats that are protected from disturbances or are representative of the geographical distribution of listed species.
- (c) Emergency determination. Paragraphs (a) and (b) of this section notwithstanding, the Director may make an emergency determination of critical habitat if he finds that an impending action poses a significant risk to the well-being of a listed species by the destruction or adverse modification of its habitat. Emergency determinations will be published in the FEDERAL REGISTER and will remain in effect for no more than 120 days.

A State or Federal agency, private group, or individual may petition the Fish and Wildlife Service or National Marine Fisheries Service for determination of critical habitat for a listed species; or the process may be initiated by either of these agency Directors.

All critical habitat proposals promulgated by the FWS or NMFS are published in the Federal Register as proposed rulemakings. Federal agencies and the public are given at least 60 days in which to comment.

The Forest Service will comment on all critical habitat determinations for which it has substantive information of potential value to the rule-making. As time allows, every effort will be made to secure current scientific information. Field units having relevant information shall submit timely comments to the WO for review, consolidation, and transmittal to the Director. Field units may initiate petitions for critical habitat determinations for attention of the WO.

Once officially determined as such, "critical habitat" takes on a legal meaning under the Endangered Species Act of 1973. The term "critical habitat" should only be used in the context of its legal definition.

The destruction, disturbance, or modification of habitat considered "critical" for a given species would not conform with Section 7 of the Endangered Species Act of 1973, if such might be expected to result in a reduction in the numbers or distribution of that species of sufficient magnitude to adversely affect the reasonable expansion or recovery of that species. It must be emphasized that because a primary purpose of the Endangered Species Act is to maintain and restore presently threatened and endangered species, application of the term "critical" is not restricted to the habitat necessary to support a minimum population. It is emphasized further that only specific kinds of actions are detrimental to habitat regarded as "critical" as defined above. There may be many kinds of actions which can be carried out within the "critical habitat" of a species that would not be expected to result in a reduction in the numbers or distribution or otherwise adversely affect that species.

In the future, where possible and desirable, as new candidate species for the threatened or endangered classification are proposed in the Federal Register, each such proposal also will contain a proposed designation of "critical habitat" for that species. For this reason,

their essential habitats must be determined on National Forest System lands so that biologically adequate, timely responses may be made to proposed rulemakings on "critical habitat."

Essential habitat shall be determined on National Forest lands for those species for which the FWS has issued a proposed rulemaking or a "Notice of Review" of their status and for which the Forest Service contemplates making recommendations favoring listing.

We now have our distinguished colleague here now, Hon. Dan Marriott from Utah. Dan, it's nice to have you before the subcommittee.

Your statement is short. Go ahead and read it.

STATEMENT OF HON. DAN MARRIOTT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF UTAH

Mr. MARRIOTT. Mr. Chairman, I appreciate very much coming before this committee and my distinguished colleagues. I will be extremely brief.

First of all, Mr. Chairman, we do have a problem in Utah regarding section 7, and the Endangered Species Act, as it involves the Virgin River and the Woundfin minnow.

In 1974, Congress passed the Colorado River Basin Salinity Control Act which authorized the construction and operation of the LaVerkin Spring's Salinity Control Unit on the Virgin River in southern Utah, wherein is found the Woundfin.

This was done as part of an overall salinity control program in the water-deficient Colorado River Basin and for the social, economic, and environmental benefit of millions of American citizens.

I would like to point out that now the entire reach of the Virgin River from Lake Mead to LaVerkin Springs has been proposed for designation as critical habitat for the Woundfin.

Mr. Chairman, parts of this reach are dry for 6 to 8 months out of the year.

I question the real motives of those who act under the guise of protecting the Woundfin as an endangered species. You see this fish has already survived for thousands of years through habitat modification and more recently in the last 100 years of using the Virgin River for domestic and irrigation purposes.

Under section 7 any habitat modification would deny construction of the LaVerkin Springs Salinity Control Unit, or the storage and utilization of domestic water for the citizens of St. George, Utah, and also the generation of electric energy through the proposed Allen-Warner Valley energy system. Everything stops—

Mr. LEGGETT. Is that a Bureau project?

Mr. MARRIOTT. As far as I understand, yes.

This project has pointed out that even the experts disagree with what is or is not an "endangered species". My files are full of exchange between U.S. Fish and Wildlife, private consultants, con-

servation groups, and representatives of the State of Utah disagreeing over the critical habitat question.

Basically the conflict on the Virgin River gets down to one agency trying to improve the quality of the water by reducing the saline elements, and another agency is demanding that the salt be retained in the flow for the protection of the Woundfin minnow.

I am here to urge that a balance can be obtained. Many experts point out that the Virgin River is not the only place where the Woundfin minnow exists and that there are strong indications that in fact the critical habitat will improve—if this action is allowed to take place.

People are more important. We should not stand in the way of sound economic development, particularly for an area that so desperately needs to expand its economic base.

As you know, this area sits out in the middle of the desert, where you're trying to expand and improve the economic situation in that area.

The Virgin River situation is but one example. I urge this distinguished committee to carefully review particularly section 7. Amendments are needed to achieve a constructive balance between the need to improve human life and at the same time preserve those truly endangered species that Congress intended in passage of the original Act.

I thank you, Mr. Chairman.

Mr. LEGGETT. Thank you very much.

Are you aware of this project?

Mr. THORNTON. Yes.

Mr. Marriott, there is some confusion. Your staff talked to me and I talked to the Fish and Wildlife Service about this.

As I understand it, the issue essentially gets down to what level of flow is necessary to sustain this population; is that your understanding?

Mr. MARRIOTT. Basically, yes.

I might indicate, though, that there is not much flow in there to begin with.

Mr. THORNTON. As I understand it, your position is that really this project could very possibly be beneficial to the species because sections of the river would not go dry at various times of the year?

Mr. MARRIOTT. That's correct.

Mr. THORNTON. That's really just a biological determination, isn't it?

Mr. MARRIOTT. And also to determine whether or not, in fact, the Woundfin minnow is an endangered species, even if it ought to be in that classification.

Mr. LEGGETT. Has the species been designated?

Mr. MARRIOTT. I don't think it has. I could be corrected on that—

Mr. LEGGETT. Is it proposed for designation?

Mr. THORNTON. Yes.

Mr. LEGGETT. And habitat is proposed for designation, is that right?

Mr. THORNTON. That's correct.

Mr. LEGGETT. We apparently have some materials here, which will be included in the record at this point.

[The following was received for the record:]

[1310-55]

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[50 CFR Part 17]

ENDANGERED AND THREATENED
WILDLIFE AND PLANTSProposed Determination of Critical Habitat
for the Woundfin

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service issues this proposed rulemaking which would determine the Critical Habitat of the Endangered woundfin (*Platypterus argentissimus*). This action is being taken because of the threatened modification of its remaining habitat. Destruction of habitat in the past has been and is presently a major factor which jeopardizes the continued existence of this species. The area proposed is in the Virgin River system in Nevada, Arizona, and Utah. This proposal would provide for Federal protection of the only remaining habitat of the woundfin.

DATES: Comments from the public must be received by January 3, 1978. Comments from the Governors of States involved with this action must be received by February 1, 1978.

ADDRESSES: Submit comments to Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

Comments and materials received will be available for public inspection during normal business hours at the Service's Office of Endangered Species, Suite 1100, 1612 K Street, N.W., Washington, D.C. 20240.

FOR FURTHER INFORMATION CONTACT:

Mr. Keith M. Schreiner, Associate Director—Federal Assistance; Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240. 202-343-4646.

SUPPLEMENTARY INFORMATION:

BACKGROUND

Historically, the woundfin was known from much of the Colorado River system downstream from the Grand Canyon in northern Arizona. It inhabits silty streams with moderate to swift current. The woundfin has been extirpated

throughout most of its native range, and is now known only from the Virgin River system in southern Nevada, northwestern Arizona and southwestern Utah.

The survival and recovery of this species depends upon the maintenance of suitable, undisturbed habitat in the Virgin River system. The Service recognizes that areas containing such streams may qualify for recognition as Critical Habitat as referred to in Section 7 of the Endangered Species Act of 1973. A notice of intent to determine Critical Habitat for the woundfin was published by the Service in the FEDERAL REGISTER of May 16, 1975 (40 FR 21499-21500). The Albuquerque Regional Office (Region 2) of the Fish and Wildlife Service forwarded the Recovery Team report recommending that the Virgin River be designated as Critical Habitat for the woundfin. Additional Service contract reports from the Denver Regional Office (Region 6) also support the proposed Critical Habitat.

After evaluating this recommendation and supporting data, a decision was made to proceed with the proposed rulemaking. The areas delineated below are inhabited by a woundfin and contain the species' only known habitat and breeding sites. If more populations are discovered in the future, additional areas may be proposed for Critical Habitat designation.

EFFECT OF THE RULEMAKING

The effects of this determination are involved primarily with Section 7 of the Act, which states:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.

An interpretation of the term Critical Habitat was published by the Fish and Wildlife Service and the National Marine Fisheries Service in the FEDERAL REGISTER of April 22, 1975 (40 FR 17764-17765).

Some of the major points of that interpretation are: (1) Critical Habitat could be the entire habitat of a species, or any portion thereof, if any constituent element is necessary to the normal needs of survival of that species; (2) actions by a Federal agency affecting Critical Habitat of a species would not conform with Section 7 if such actions might be expected to result in a reduction in the numbers or distribution of that species of sufficient magnitude to place the species in further jeopardy, or restrict the potential and reasonable recovery of that species; and (3) there may be many kinds of actions which can be carried out within the Critical Habitat of a species which would not be expected to adversely affect that species. In addition, it should be noted that the prohibitions of Section 7 apply only to Federal agencies.

A Critical Habitat designation is based solely on biological factors and serves only to officially notify Federal agencies that their responsibilities under Section 7 of the Act are applicable in a certain area. The impact of specific Federal actions on listed species should be dealt with after Critical Habitat has been designated, as they are not relevant to the biological basis of Critical Habitat determination. The Service, in cooperation with other Federal agencies, has drafted guidelines which establish a consultation and assistance process for evaluating the possible effects of actions on the Critical Habitat of listed species involved. Proposed regulations for Interagency Cooperation were published on January 26, 1977, in the FEDERAL REGISTER (43 FR 4638-4675) which will assist Federal agencies in complying with Section 7 of the Act when published in final form.

PUBLIC COMMENTS SOLICITED

The Director intends that the rules finally adopted be as accurate as possible

in delineating the Critical Habitat of the woundfin. The Director, therefore, desires to obtain the comments and suggestions of the public, other concerned governmental agencies, the scientific community, or any other interested party on these proposed rules.

Final promulgation of Critical Habitat regulations will take into consideration the comments received by the Director. Such comments and any additional information received may lead the Director to adopt final regulations that differ from this proposal.

An environmental assessment has been prepared in conjunction with this proposal. It is on file in the Service's Office of Endangered Species, 1612 K Street, NW, Washington, D.C. 20240, and may be examined during regular business hours or may be obtained by mail. A determination will be made at the time of final rulemaking as to whether this is a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969.

The primary author of this document is Dr. James D. Williams, Office of Endangered Species, Washington, D.C. 20240, 202-343-7814.

REGULATION PROMULGATION

Accordingly, the Service proposes to amend § 17.93(e) by adding Critical Habitat of the woundfin after that of the slender chub as follows:

§ 17.93 Critical habitat—fish and wild life.

(e) *Fishes.*

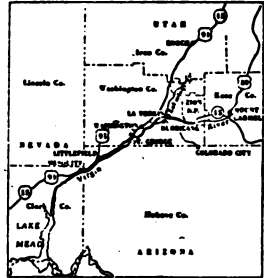
Woundfin (Plagopterus argentissimus)

Nevada. Clark County. Main channel of Virgin River from the backwaters of Lake

Mead upstream to the Nevada-Arizona State line.

Arizona. Mohave County. Main channel of Virgin River from the Nevada-Arizona State line to the Arizona-Utah State line.

Utah. Washington County. Main channel of Virgin River from the Arizona-Utah State line upstream to Utah Highway 15 crossing north of Hurricane, Utah. Le Verkin Creek from its junction with the Virgin River upstream through Section 31, Township 40 South, Range 12 West.



CRITICAL HABITAT FOR THE WOUNDFIN

NOTE.—The Department of the Interior has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11949 and OMB Circular A-107.

Dated: October 25, 1977.

LYNN A. GREENWALT,
Director, Fish and
Wildlife Service.

[FR Doc. 77-31705 Filed 11-1-77; 8:45 am]



United States Department of the Interior
FISH AND WILDLIFE SERVICE

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Denver, Colorado 80225

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18697 West Sixth Avenue
Lakewood, Colorado
Across From Federal Center

IN REPLY REFER TO:
FA/SE/Coop. FED--ELM--
Allen-Warner Valley
Energy Projects

APR 3 1978

MEMORANDUM

To: State Director, Bureau of Land Management
Salt Lake City, Utah

From: Regional Director, Region 6
Fish and Wildlife Service, Denver, Colorado

Subject: Formal Consultation on the Allen-Warner Valley Energy Projects

Please consider this our official biological opinion on the effects of these projects on the endangered species listed in your August 26, 1977, request for formal consultation.

The projects would not affect the Yuma clapper rail or the unarmored three-spine stickleback, which do not occur in any of the project areas. We also have concluded that the projects would not jeopardize the continued existence of the American peregrine falcon, which is not known to nest in the area. Effects on other species will be discussed for each project as follows:

Warner Valley Water Project

Following the October 18, 1977, field review, the U.S. Fish and Wildlife Service has spent considerable time reviewing the available biological and project data. It is our opinion that the Warner Valley Project as now proposed¹ will be likely to jeopardize the continued existence of the endangered woundfin by adversely modifying its present habitat in the Virgin River. This habitat is considered essential for survival of the species and has been proposed for designation as "Critical Habitat," as

¹Project features and descriptions were evaluated from the BLM Preliminary Draft Environmental Impact Statement, June 1977, and the Vaughn Hansen Associates Report, entitled, Impact of Warner Valley Water Project on Endangered Fish of the Virgin River, October 1977.



32-675 1065

Save Energy and You Serve America!

provided for by the Endangered Species Act of 1973, in the Federal Register, Vol. 42, No. 211, Wednesday, November 2, 1977.

When we evaluated the impact of this project on the woundfin, we did not attempt to determine the absolute minimal biological and physical conditions which the species could withstand without passing into extinction. Rather, we reviewed all the data to determine what conditions are needed in order to maintain a healthy population of woundfin in the Virgin River. We based our analysis on the premise that the historic conditions which have occurred in the Virgin River have provided the environmental and biological conditions for a viable self-sustaining population of the woundfin.

Although very low flow conditions have occurred in the Virgin River in past years, which undoubtedly affected the woundfin population, these did not persist for extended periods of months or years and thus did not significantly affect the long-term viability of the woundfin populations. For a short-lived minnow like the woundfin (life expectancy of 3 or 4 years), a long-term reduction of flow which adversely affects reproduction and survival of young has the potential of drastically reducing population numbers.

The primary environmental parameter the Warner Valley Project would affect is stream flow. Secondary impacts associated with stream flow alteration are changes in water quality, including temperature, and reduction of available aquatic space for both fish and other associated aquatic life. Another factor evaluated was the potential impact of the proposed Warner Reservoir as a possible source for introduction of exotic fish species into the Virgin River. Our detailed analyses of these factors are as follows:

A. Flow--The project will cause a significant reduction in flow of the Virgin River between LaVerkin Springs and the California Pacific Power Plant outflow which will reduce presently occupied woundfin habitat by approximately 1/4 mile of stream. (See additional detail under water quality).

The project will cause a significant flow reduction of the Virgin River between the Power Plant outflow and the Washington Fields Diversion. This reduction has been estimated at the Hurricane Gaging Station as up to one-half of the average flow in cubic feet per second (cfs) during winter and spring. These flow reductions during the critical spring reproduction period and the overwinter survival period will reduce the quality of this habitat for the woundfin. The reduced post-project winter and spring flows will result in a smaller, less viable woundfin population in this river section.

Conclusions for this flow-related population reduction are based upon the findings of Dr. James Deacon of the University of Nevada, Las Vegas, in the Vaughn Hansen Associates Report (1977) that the 1977 flow condition resulted in very restricted survival of young woundfin above the Virgin River Narrows. Although we recognize that post-project minimum flows are not projected to be as low as those which occurred in 1977, the stream flow/woundfin reproduction relationship suggests that low flow does affect the woundfin population. Even though low-flow conditions occur naturally, and 1976 and 1977 were both low water years, the post-project conditions would increase the frequency of these low flow conditions. Therefore, with increased occurrence of low flow in this river section, woundfin reproduction would be more frequently affected, and the overall population would be reduced. We do not know the population level at which the woundfin would face possible extinction. We do know, however, that once any species is reduced to a certain low point, the extinction process is greatly hastened. Therefore, we must view any major reduction in population numbers and in essential habitat as adverse and likely to contribute to the eventual extinction of the species.

The project will increase the frequency and duration of no-flow conditions immediately downstream of the Washington Fields Diversion for approximately 2 miles. This area is now occupied by woundfin for the 2- to 3-month period when water is available.

The project will decrease winter and spring flows in the Virgin River from Washington Fields Diversion to the Virgin River Narrows area. Average post-project flows in this area are projected to be decreased during winter and spring by one-third to one-half. These flow reductions are believed to be significant enough to affect the available habitat of the woundfin and would result in a general decrease in the woundfin population numbers above the Virgin River Narrows.

We recognize the project would have a beneficial impact during the low flow months of July through September from irrigation return flow downstream of the Washington Fields Diversion. This would, in all probability, improve conditions for woundfin during the summer months and would probably result in a larger woundfin population surviving the summer in this river section. However, this beneficial impact would be negated by the reduced habitat available during the winter and spring periods.

Impacts of the project on streamflow below the Virgin River Narrows cannot be adequately addressed because of the limited understanding of the hydrologic relationship between upstream Virgin River flow and the Littlefield Springs recharge. However, it is important for the

woundfin below the Narrows that the integrity and consistency of the spring discharge be maintained. Any action which would result in less recharge from the Littlefield Springs would adversely affect the woundfin habitat below the Virgin River Narrows.

B. Water Quality--The proposed project alteration in base flow conditions during the year may cause a change in duration and/or frequency of critical water temperature conditions. Because water temperature of the Virgin River is highly dependent upon ambient air temperature and local atmospheric conditions, it fluctuates quite extensively. Past records have indicated fluctuations of up to 14-16° C. in a 24 hour period. With less flow under post-project conditions, there is a possibility of an increased rate of temperature change. It has been reported by Lockhart (unpublished masters thesis, University of Nevada, Las Vegas) that the upper temperature limit for woundfin is near 35° C. Deacon (Vaughn Hansen Associates Report, 1977) has reported that temperatures over 30° C. are undesirable for woundfin. Lockhart also stated he did not collect woundfin in waters less than 7° C. Based upon these reports and discussions with Dr. Deacon concerning critical water temperatures for woundfin, we believe the occurrence of temperature extremes, both high and low, may increase under the project and adversely affect the woundfin. The Vaughn Hansen Associates Report (1977) concluded there was no relationship between flow and water temperature, and thus there would be no project impact on water temperature. We cannot agree with this conclusion at this time because of the questionable nature of the temperature data analyzed by the Vaughn Hansen Associates Report. These data were recorded by the U.S. Geological Survey in conjunction with the taking of sediment samples and were published in the U.S. Geological Survey Water Quality Records for Utah. Upon closer examination of the actual field data sheets, we found these U.S. Geological Survey data were unsuitable for detailed analysis and yearly comparisons because of variation in the time of day measurements were taken, which ranged from 6:00 A.M. to 10:00 P.M., and also because different people, possibly using different procedures, had taken these temperatures.

With flows in the Virgin River reduced by the project, the toxic effects of the LaVerkin Springs water will extend for a longer distance downstream. The toxicity of these springs has been reported by various researchers including Williams (1977) and Lockhart (unpublished M.S. thesis). The distribution of fishes of the Virgin River, as given in Cross (1975), shows no fish exist in close proximity to the LaVerkin Springs. If less flow is permitted past the Hurricane Diversion under post-project conditions, there will generally be less water in the Virgin River at LaVerkin Springs for dilution and moderation of the toxic chemical qualities of the spring water. Therefore, the presently occupied river section upstream of the California Pacific Power Plant outflow, approximately 1/4 mile, will be lost as available woundfin habitat.

C. Exotic Species Competition--There are numerous documented records of exotic fish species causing the reduction or extinction of native fish fauna. This has been reported by Minckley and Deacon (1968). It was concluded by biologists at a meeting in Las Vegas (Vaughn Hansen Associates Report, 1977) that exotic species will be introduced into the Virgin River drainage by the proposed Warner Valley Reservoir. The impact of this exotic fish introduction will depend upon whether the exotics can become established in the Virgin River. Because the post-project conditions, as the project is now proposed, will reduce base flows and cause the Virgin River to become more intermittent, we believe exotic species, such as green sunfish and red shiner, will become better established. This conclusion is based upon past reports which state that green sunfish and red shiner prefer river habitat of an intermittent nature including sluggish flows and no-flow conditions (Minckley, 1973 and Cross, 1967). Therefore, the Warner Valley Reservoir, in conjunction with reduced, intermittent base flows, would provide environmental conditions favoring establishment of additional exotic fish into the Virgin River system.

Recommendation:

Since the Warner Valley portion of the project as now proposed is likely to jeopardize the continued existence of the woundfin, we have provided recommendations which we believe would eliminate the adverse impacts. In order to fully understand our recommendations, we believe it is necessary to review past recommendations and what organizations or individuals made them.

Table 1 - Past Flow Recommendations for the Virgin River

Date	Organization or Individual	Flow Recommendation
2/77	Bio/West Inc. authored by J.E. Deacon and P.B. Holden (1977)	60-90 cfs for winter and summer flow
10/77	Vaughn Hansen Associates Report (1977)	
	1. Under general summary findings	40 cfs minimum
	2. R.W. Winget and R.W. Baumann section	30-40 cfs minimum
	3. J.E. Deacon section	80-100 cfs Apr. - mid-July 60 cfs after mid-July 80-100 cfs for winter

As seen from the above table, past flow recommendations for the Virgin River have ranged from 30 to 100 cfs. Also, the point or points at which these flows are needed was not indicated except for those by Deacon in the Vaughn Hansen Associates Report.

In our analysis, we used the past flow records plus the available biological data contained in various reports. We have made our flow recommendations based upon the best data available. If and when more data become available, both hydrological and biological, we reserve the option of adjusting these recommendations.

Basic years analyzed were 1967 through 1977. Key years were: 1968--near average water year for the 10 years of record; 1973--above average water year with available biological data; 1977--below average water year with available biological data. Other flow records and additional biological data were also inspected and coordinated with the data cited above.

Our streamflow recommendations for the endangered woundfin are divided into three periods, based upon the biology of the species:

1. The fall-winter period of November through February when the adults are overwintering;
2. The spring-early summer period of March through June when spawning occurs; and
3. The summer-early fall period of July through October when growth and development of young occur.

Because of the variation in flow along the Virgin River, we have chosen a specific point, the Hurricane Gage, to which we have related our flow recommendation. This point was chosen because: the past flow records are available, it is located in good woundfin habitat, and it is only about 12 miles downstream from the Hurricane Diversion.

The following are our flow recommendations for the Hurricane Gaging Station:

November through February--110 cfs or natural flow, whichever is less.

March through June--110 cfs or natural flow, whichever is less.

July through October--70 cfs or natural flow, whichever is less.

If these flow recommendations can be maintained at the Hurricane Gaging Station, which is downstream of the diversion site, we believe the project's adverse impacts on the woundfin can be eliminated.

Our recommended flows agree quite closely with those of Deacon in the 1977 Vaughn Hansen Associates Report. They should be considered as refinements of Deacon's data, since we used additional flow records and additional years of data. Deacon's recommendations were derived from interpretation of two years of flow data, 1973 and 1977, as presented in hydrographs. He correlated this graphic flow data with the woundfin reproduction from above and below the Virgin River Narrows to make his estimates. To arrive at our recommendations, we used basically the same biological data as Deacon, but we expanded the flow data base by using tabular and actual U.S. Geological Survey daily flow records.

We have recommended 70 cfs for July through October, while Deacon recommended 60 cfs after mid-July for the summer months. The actual low flow for this period during the 1973 water year when woundfin fared well, was 64 cfs, but the 1973 mean monthly low flow for the period was approximately 70 cfs. Therefore we feel that Deacon's interpretation of the graphic data was slightly low. Our recommendation of 110 cfs, where Deacon has recommended 80-100 cfs, should not be viewed as conflicting recommendations. Deacon interpreted graphic material and presented an estimate of 80-100 cfs. We used the additional data available and refined this figure to 110 cfs. From the period of flow record, 1967-77, the most common low flow for the March-June period was 110-120 cfs. In 1968, the average water year, the mean monthly flow for the March-June period ranged from 115-406 cfs. Although in 9 out of the past 11 years flows of 91-100 cfs occurred for short periods, these lower flows usually occurred in June, a late spring month impacted significantly by irrigation diversions. Data from the winter flow period also contributed to the formulation of the final 110 cfs spring recommendation. The winter period of November to February had low minimum flows 8 out of 10 years of 101-110 cfs. Although other hydrological statistics indicated higher average winter flows we do not believe this period is as critical as the spring period, and therefore recommended 110 cfs for winter flows. Because of the spring reproduction period of the woundfin we do not believe that a flow greater than 110 cfs for the winter should be dropped just prior to spring spawning. On the contrary, winter to spring flows normally would increase or at least remain constant. Because of this we have recommended a constant flow of 110 cfs for both winter and spring.

The recommended flows of Bio/West Inc., February 2, 1977, were partially computed by Deacon. These flows were estimates and later were revised by Deacon in the Vaughn Hansen Associates Report.

We cannot accept the 40 cfs and 30-40 cfs recommended flows of Winget and Bauman in the Vaughn Hansen Associates Report. We understand these flows were estimated by indirect methods not having any real connection with the biology of the woundfin. Because the expertise of the authors is in invertebrates, much of their flow rationale is related to invertebrate production. Invertebrates differ from fish by having relatively short life cycles, with certain life stages, i.e. eggs, able to aestivate through short severe periods such as droughts. In many cases they also prefer different habitat. The river channel cross-sectional data presented to show that 40 cfs is sufficient flow is deceptive since the break-off point of 40 cfs is very arbitrary. The few cross sections of stream may or may not be representative of the actual situation. Also, the authors looked at only one year, 1977, a very low water year. We suspect that the invertebrate communities they analyzed were in a stress situation, not representative of the normal water year situation.

Harry Allen Power Plant

No endangered or threatened species occur within the immediate area of the plant site; therefore, there will be no adverse impact on these species because of construction activities.

The operation of the Harry Allen Plant will result in the emission from the stacks of an estimated 0.8 lb/day of mercury which would be approximately 292 lb/year. Other trace elements such as arsenic and selenium will also be emitted from the power plant stacks. There is presently insufficient data in the literature to determine the impacts of long-term trace element accumulation on the environment. However, because of the presence of the endangered moapa dace, the woundfin, bald eagle, and peregrine falcon in the general emission fallout area, the Fish and Wildlife Service does have concerns about the impacts of fallout from the stack emissions.

Therefore, we recommend that trace element accumulation in the soil, vegetation, water, aquatic invertebrates, and aquatic vertebrates in the fallout area be monitored. In addition, we are proposing that the project assist in sponsoring concurrent bioassay work on acute and chronic toxicity levels of the various trace elements on the different life stages of the native fishes of the fallout area. Data from fish could then be evaluated for potential impact on fish-eating birds such as eagles.

If trace element problems develop in the environment, the operation of the Harry Allen Power Plant would have to be modified to eliminate these effects.

Coal Slurry Pipeline

If the procedures which have been recommended in the Preliminary Draft Environmental Impact Statement are followed, it is our opinion there will be no adverse impact on the woundfin or other endangered species.

Power Transmission Line

If the procedures which have been recommended in the Preliminary Draft Environmental Impact Statement are followed, it is our opinion there will be no adverse impact on the woundfin. The path of the power line given in the statement is below moapa dace habitat and therefore construction of the power line would not be likely to have any effect on the moapa dace.

Also, if electrical transmission lines less than 230 KV are constructed according to Rural Electrification Administration standards for the prevention of raptor electrocution and the 1975 publication "Suggested Practices for Raptor Protection on Power Lines," by the Raptor Research Foundation, it is our opinion that there will be no significant impact on bald eagles. The larger voltage transmission lines are not expected to cause any problems to the bald eagles.

Because of the complexity of these situations, a large volume of material was reviewed and analyzed, not all of which is included in this memorandum. However, feel free to contact us for any additional information or clarification of this opinion.

As we noted in our September 15, 1977, acknowledgement to your request for consultation, we cannot formally consult on proposed or candidate species in the project areas. Technical information on proposed plants will be supplied informally in a separate memorandum in the near future.

We appreciate your cooperation and interest in conserving endangered species.

Harvey Abiloughby

cc: Area Manager, Salt Lake City
ARD, Environment
RD, Region 1
RD, Region 2

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Mr. LEGGETT. When are these regulations proposed to become final?

This is a proposed rule, and apparently it is still pending. Do we have any correspondence from the Department on this?

Mr. THORNTON. No, we do not.

Mr. LEGGETT. Let's go ahead and do that and we'll see what the status of that is.

Any further questions? Mr. Forsythe.

Mr. FORSYTHE. Just one. Thank you, Mr. Chairman.

Dan, in this process of designation, has there been the opportunity for public participation and involvement in the decisionmaking process?

Mr. MARRIOTT. Mr. Forsythe, the complaint I'm getting from all my constituents in southern Utah is not only with the agencies involved here, but almost all the Federal agencies who control the Federal lands there, that there is no oversight—no room for citizen input, that they simply are avoiding that issue. The citizens are not being heard on this issue or anything else.

We have brought this up in a number of other committees. I'm on the Interior Committee and we're trying to solve the problem from that end.

But in answer to your question, no, citizen input has not been given and has not been allowed in this matter up to this point.

Mr. LEGGETT. This has not been determined to be a major Federal impact, thus requiring an environmental impact statement.

Mr. MARRIOTT. Correct, that's my understanding. The main concern is, of course, that people have been living in this area with the Woundfin Minnow for a number of years, and now they're beginning to get to the point where they're getting some construction in and some power units and some other economic programs, and now all of a sudden we've got the Woundfin Minnow being the big problem.

Mr. FORSYTHE. But the fact is, this desalinization project and the power project have not been classified as major Federal actions and therefore no EIS has been done.

Mr. MARRIOTT. We're not to that point yet on any of these projects, so I don't know what NEPA has done at this point.

Mr. FORSYTHE. I guess it's a coordination problem, basically. You have to get one thing moving out on the basis of something else that may happen down the road. Again, I think it's worthy of the new regs as far as this situation is concerned and it would be advantageous in this coordination process in making sure we have the ability for input down through the whole process.

Mr. MARRIOTT. I appreciate that.

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. You're not at that point as far as the EIS is concerned, but you are at that point with respect to the designation of critical habitat?

Mr. MARRIOTT. Correct.

Mr. LEGGETT. Mr. Oberstar?

Mr. OBERSTAR. I just wanted to inquire of our colleague whether the salinity control project is in any danger as a result of this designation of critical habitat, or the listing of endangered species.

Mr. MARRIOTT. I don't have my counsel with me today, but I do understand that yes, it is. I would be glad to provide some additional information along that line to the gentleman, if you'll let me beg off for a day or two until they can prepare that.

Mr. OBERSTAR. All right, the background on the cost of the project and a brief description of it.

Mr. MARRIOTT. Fine.

Mr. OBERSTAR. And the timeable.

This is precisely the kind of situation above which we want to have more information, because obviously something has gone wrong in the consultation process before the authorization of the project. If we're going to have a successful act, we should avoid these conflicts and discover these problems in advance. We should avoid any instance of people using the critical habitat and possible endangered species to stop a water resource project which they really want stopped for some other purpose.

Mr. MARRIOTT. I think there is some of that here, but I wouldn't want to say at this point how much.

Mr. FORSYTHE. Would the gentleman yield?

Mr. OBERSTAR. I would be glad to.

Mr. FORSYTHE. In the case of this desalinization project, you really have a major Federal action with international as well as domestic impact on one of the basic ingredients of the human environment—fresh water.

Mr. MARRIOTT. Yes.

Mr. FORSYTHE. Is that one of the principal reasons for the desalinization?

Mr. MARRIOTT. That's my understanding.

Mr. OBERSTAR. That's a problem with the whole Colorado River. I thank our colleague for his very helpful contribution.

Mr. LEGGETT. Thank you very much.

Mr. MARRIOTT. Thank you, Mr. Chairman.

Mr. LEGGETT. We'll follow that up. It's an interesting microcosm of this whole issue, and we want to make sure the act is working in every respect.

We will not have Francis B. Roche, Director of Real Property and Natural Resources, Office of the Secretary of Defense, and you have General Kuci of the Marine Corps with you.

We might as well also call at the same time Lieutenant Colonel Hill of the Corps of Engineers. And you have your zoologist, Mr. Bushman, with you, and your lawyer, Mr. Wood. I think we have enough chairs for all you folks.

Gentlemen, it's nice to have all of you here before the subcommittee. We are interested in how our legislation is impacting on our defense posture.

There have been some representations made to the subcommittee by one of our colleagues, Mr. Robin Beard, who is in the Marine Corps Reserve and knows of some of the activities of the Marine Corps and of the Department of Defense. He serves on the Armed Services Committee with me. We thought it might be helpful if we could have the Department of Defense here to comment on Mr. Beard's testimony, and also on the legislation that we have on the books, vis-a-vis our defense posture.

Mr. Roche.

STATEMENT OF FRANCIS B. ROCHE, DIRECTOR, REAL PROPERTY AND NATURAL RESOURCES, DEPARTMENT OF DEFENSE, ACCOMPANIED BY BRIG. GEN. R. A. KUCI, DIRECTOR OF TRAINING DIVISION, HEADQUARTERS, U.S. MARINE CORPS

Mr. ROCHE. Mr. Chairman and members of the subcommittee: I am Francis B. Roche, and I am the Director for Real Property and Natural Resources, Office of the Assistant Secretary of Defense for Manpower Reserve Affairs and Logistics.

I am accompanied this morning by Brig. Gen. R. A. Kuci, U.S. Marine Corps, who is the Director of the Training Division in Headquarters, U.S. Marine Corps.

At the outset, Mr. Chairman, we would like to separate the two sets of witnesses here at the table this morning, in that I will be addressing the military side of the house, while Colonel Hill, who also has a statement, will be addressing the civil works aspects of the Corps of Engineers work.

Mr. Chairman, we appreciate the opportunity to participate this morning in your oversight hearings on the Endangered Species Act of 1973. More particularly, we would like to address the impact of section 7 of the act on military missions and attempt to put to rest the allegations that had been made in the course of your hearings, that listing of endangered species and the designation of critical habitat within Defense Department installations have severely impacted or handicapped some military operations.

As you know, section 7 of the act provides that all Federal departments and agencies shall utilize their authorities in furtherance of the purposes of the act by carrying out programs for the conservation of endangered and threatened species and by taking such actions necessary to insure that actions authorized, funded or carried out by them do not jeopardize the continued existence of such endangered and threatened species or result in the destruction or modification of habitat of such species.

In meeting its responsibilities under the act, the Department of Defense has developed and implemented policies and programs for the identification of species which range on its installations and for the protection of their critical habitat.

We have participated with the Departments of the Interior and Commerce in developing interagency cooperation regulations on endangered species and have recently concluded a new memorandum of understanding with the Department of the Interior under the Sikes Act which gives added emphasis to our responsibilities under the Endangered Species Act of 1973.

Additionally, we are implementing that portion of the President's environmental message of last year pertaining to identifying and protecting critical habitat by participating in a cooperative program with the U.S. Fish and Wildlife Service for the submission of critical habitat recommendations for species occurring on lands under our jurisdiction or control.

Our directives have, in turn, been implemented by the four military services which require in their regulations that installations include endangered species in environmental impact analysis, in master plans, in installation management plans, in fish and wildlife management plans, and in the cooperative agreements with

State fish and game agencies and the U.S. Fish and Wildlife Service.

Our attention to endangered species protection has resulted in several success stories of which we are quite proud. The Air Force's protection of the whooping crane at the former Matagorda Island Air Force Range in Texas has assisted immeasurably in the recovery of this endangered species.

The Marine Corps has initiated efforts to protect the habitat of the California Least Tern at the Marine Corps Base, Camp Pendleton, Calif., which has probably been the most important single act to protect and encourage reproduction of this important species.

Likewise, initiatives of the Marines at the Marine Corps Air Station, Kaneohe Bay, Hawaii, and the Navy at Pearl City, Hawaii, are nationally recognized when the future of the endangered Hawaiian Stilt is discussed. Military success with other species is equally heartening.

In response to your specific inquiry, the Office of the Secretary of Defense has received no official military complaints that the act has either restricted training or otherwise had a deleterious effect on military operations. We have been able to accommodate the act without adversely impacting on our effectiveness.

What problems have arisen with regard to section 7 have been mainly construction-oriented. Our research reveals that these could have been avoided if the local survey and identification of species and habitat had been completed on a timely basis and the environmental assessment of the impact of the construction had been more thorough.

We are practical enough to realize that this situation could change in the future as the listing of threatened and endangered species and critical habitat is expanded and more of such species or habitat are found on or near military installations. We are confident, however, that the consultation process specified in the act will ameliorate the impacts.

We are also apprehensive of what a concentrated effort to identify endangered or threatened plants will bring and what the impact will be on troop training and maneuvers. However, we are hopeful that we can again accommodate to this environmental priority as we are doing with the endangered fauna.

Mr. Chairman, this completes my prepared testimony. We would be happy to respond to any questions you may have on DOD policy or, as you stated in your letter, the impact on the mission of Marine Corps Base, Camp Lejeune, N.C.

Mr. LEGGETT. Thank you very much.

Have you speculated at all on the possible amendments to section 7 considering the apprehensions that you expressed on the last page of your statement?

Mr. ROCHE. Sir, at this time we would not support any change to the Endangered Species Act.

Mr. LEGGETT. Have you cogitated that at all?

Mr. ROCHE. Yes, sir.

Mr. LEGGETT. Have you rationalized this policy through OMB?

Mr. ROCHE. No, sir, we have not.

Mr. LEGGETT. Your policy comes strictly from the Department of Defense?

Mr. ROCHE. Yes, sir.

Mr. LEGGETT. That's very helpful testimony.

We now have to vote on a rule for our public works projects, so we will have to adjourn for about 5 minutes. We will come back and proceed with the other Defense witnesses.

The meeting will stand in recess.

[Whereupon, the subcommittee was in a brief recess.]

Mr. LEGGETT. The Subcommittee will come back to order.

When we adjourned we were going to suspend the questions of Director Roche and hear from General Kuci.

General KUCI. I have no statement, sir.

Mr. LEGGETT. I understand the Supreme Court decision just came out affirming the Sixth Circuit Court decision with respect to construction activities in the State of Tennessee, also known as Tellico Dam project.

General Kuci. did you want to say anything?

General KUCI. No, sir, I have no prepared statement to make, other than I'm ready to answer any questions you have. I do appreciate being here.

Mr. LEGGETT. All right.

We will now hear from Colonel Hill.

STATEMENT OF LT. COL. JOHN R. HILL, JR., ASSISTANT DIRECTOR OF CIVIL WORKS FOR ENVIRONMENTAL PROGRAMS, OFFICE OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY, ACCOMPANIED BY JOHN B. BUSHMAN, ZOOLOGIST, OFFICE OF THE CHIEF OF ENGINEERS, AND LANCE D. WOOD, OFFICE OF THE CHIEF COUNSEL, CORPS OF ENGINEERS

Lieutenant Colonel HILL. Sir, I am Lt. Col. John R. Hill, Jr., Assistant Director of Civil Works for Environmental Programs, Office of the Chief of Engineers, Department of the Army.

I am pleased to appear before this subcommittee to explain how the Endangered Species Act of 1973, especially section 7, affects the operation of the Corps of Engineers.

I would like to introduce my two colleagues with me here today. On my immediate right is Mr. John B. Bushman, a zoologist in the Office of the Chief of Engineers. John is our environmental planner who deals most frequently with endangered species questions. And on my extreme right is Mr. Lance D. Wood, an attorney in the Office of the Chief Counsel of the Corps of Engineers, who handles many of the corps' legal questions involving endangered species.

As you know, the Corps of Engineers deals with endangered species questions when the corps plans and constructs civil works projects to develop water resources and when the corps determines whether to grant or deny permits for activities in or affecting U.S. waters, if those activities may adversely modify critical habitat or jeopardize the continued existence of endangered species.

The Corps of Engineers fully supports and strives to implement the goals of the Endangered Species Act. Since 1973, we have done our best to protect endangered species while carrying out all our missions and can claim considerable success.

Substantial endangered species questions have arisen in at least 52 projects which the corps is planning or constructing and in at

least 68 additional cases where non-Federal interests sought corps permits for activities in or affecting U.S. waters.

Of those cases, the corps has successfully accommodated endangered species by means of careful planning and project modification for at least 7 of the corps projects, by placing protective restrictions on at least 30 of the corps permits which have been granted, and by denying other requests for permits.

To insure that all levels of the Corps of Engineers, including district and division offices, will implement section 7 of the act conscientiously, the corps published draft regulations concerning section 7 on January 16, 1978. Although those regulations are not yet in final form, they require every corps component with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, as appropriate, for any case where some endangered species may be affected adversely by a proposed corps action.

The corps draft regulations explain the specific manner in which section 7 applies to corps feasibility planning studies preceding project authorization, projects under construction, or projects already constructed but subject to corps operation and maintenance, and how section 7 affects corps regulatory functions and emergency operations.

The specific cases which I will describe next show the range of planning and operational activities which the corps now employs to protect endangered species, implementing the letter and spirit of the Endangered Species Act.

First, while dredging a federally maintained channel in Humboldt Harbor and Bay, Calif., the corps discovered that if the dredged material were deposited on our traditional dredged spoil disposal sites in that area, we might harm the rare Menzies wallflower. So the corps spent approximately \$150,000 to use alternative spoil disposal sites, protecting that rare wildflower.

In the second case, when the corps was planning annual maintenance dredging for the Mississippi River navigation pools numbered 11 through 22, we discovered that our standard dredging procedures could destroy endangered mussels or their habitat. The corps spent about \$25,000 to study and modify our methods for dredging and spoil disposal to protect the mussels.

In the third case, while planning a local flood protection project for Davenport, Iowa, we found that our original design could have harmed endangered mussels at the borrow site, since we intended to take earth from the river to build the levees; also, the proposed levees would have destroyed shoreline trees used by bald eagles. We think we have solved those problems by choosing new borrow sites and by realining the levees to minimize loss of trees used by eagles. The additional planning and designing cost us about \$4,000.

In the following cases, permits were sought from the Corps of Engineers for actions which might have affected adversely some endangered species.

In the first case, the U.S. Navy sought a corps permit to place fill material in Magu Lagoon, near Oxnard, Calif., in a manner which would have harmed a feeding area for the least tern. The corps required the permit applicant to modify the design. Consequently, the construction costs increased about \$100,000. We thereby enlarged intertidal zones and allowed tidal flushing in the affected

area, preserving much of the least tern's habitat. The cost to the Federal Government was significant in that instance.

In the second case, the corps, following consultation with the Fish and Wildlife Service, has placed restrictions on at least five non-Federal waterfront developments in Florida to protect the manatee. For example, we have limited the number of boat docks which can be built in manatee habitat, and we work with other government agencies to impose strict boating regulations, to prevent collisions between manatees and boats. The cost to the corps for studies and administrative actions for those five cases was only \$700.

In the third case, in consultation with the Fish and Wildlife Service, the corps has placed restrictions on permits for activities to extract natural resources from St. Charles Bay and San Antonio Bay in Texas, forbidding certain specific work activities between October 16 and April 15. Those regulations protect the critical habitat of the whooping cranes, at negligible Federal expense.

As the preceding examples demonstrate, some corps efforts to protect endangered species require little extra expenditures of Federal funds. Some require considerable Federal expense. Some require expenditure of greater or lesser sums by private interests who seek Federal permits. But regardless of expense, in all the cases cited above the corps simultaneously protected endangered species and accommodated Federal or private activities.

The Corps of Engineers will continue to implement the letter and spirit of the Endangered Species Act. The corps will continue to work closely with the Fish and Wildlife Service and the National Marine Fisheries Service as we try to plan and construct projects authorized by Congress while simultaneously protecting endangered species.

Mr. Chairman, my colleagues and I will be pleased to answer any questions that you may wish to ask us.

Mr. LEGGETT. Thank you very much, Colonel Hill.

You indicate a number of instances where you have come face-to-face with endangered species, and you have accommodated within the framework of a few hundred thousand dollars. Certainly, considering the magnitude of the corps' budget and the budgets we're working with on the floor right at this minute, that is not what you would call a significant amount.

Your feeling, I presume, is that you do not favor amendments to the Endangered Species Act; is that correct?

Lieutenant Colonel HILL. Sir, that's the administration's position and our position.

Mr. LEGGETT. I don't mean to ask too many things at one point, but I hear you talk about magnitude of dollars, that you have solved these things with negligible amounts.

What if you discovered, as an example, some endangered mussels in the middle of Martinez Straits, slightly upriver of Sacramento, and you had to maintain those endangered mussels and that caused you to abort your dredging project. Would you feel any different about an amendment to the Endangered Species Act at that point?

Lieutenant Colonel HILL. I think if that kind of conflict arose, we would be faced with the proposition of foregoing the benefits accru-

ing to the public and economy of maintaining that harbor, or the Congress making a specific exception to the act in that particular case. That's not to say, Mr. Chairman—

Mr. LEGGETT. Do you think you have to come back to Congress every time you come nose to nose with a problem like that?

Lieutenant Colonel HILL. That would probably be rather awkward and take up a lot of—

Mr. LEGGETT. Don't you think there ought to be at least a measure of weighing the public interest vis-a-vis the development and public interest versus the protection of species that are designated?

Lieutenant Colonel HILL. Yes, sir. I certainly do.

I would point out that about a year ago the Department of the Army did propose such a thing, and I think Mr. Wood might elaborate a little bit on that and what happened.

Mr. LEGGETT. Mr Wood?

Mr. WOOD. The Corps of Engineers, through the Department of the Army, has to report on pending bills. Some of these bills, such as H.R. 4367, which I believe Mr. Beard sponsored, did propose amending section 7. The Department of the Army's position was that the precise wording of that bill was not acceptable to the Department of the Army, and the Department of the Army proposed an alternative method of amending section 7.

Mr. LEGGETT. Which was that? Do you have the words of your alternative?

Mr. WOOD. I do not have that report here. The Office of Management and Budget never cleared that report.

Mr. LEGGETT. They have not cleared it?

Mr. WOOD. The Department of the Army's position is—

Mr. LEGGETT. Would you provide a copy of that report to the subcommittee in its current form?

Mr. WOOD. We can provide that later.

Mr. LEGGETT. Now, Mr. Forsythe's bill on nongame species provides an admonition to Federal agencies to protect designated nongame species to the maximum extent feasible.

Do you find anything wrong with that kind of standard?

Lieutenant Colonel HILL. No, sir. I think by feasibility it embodies a concept of economy and the balancing of interests, and we would not have any problem with that, if that's the intent.

Mr. LEGGETT. Do you find anything wrong with the requirement of an environmental impact study at the time the critical habitat is designated, considering the fact the critical habitat can abate major activities of the Federal Government, where it would appear that designation of critical habitat is, in fact, a major Federal action?

Considering that, would you not think it's reasonable that at the time you designate the critical habitat you consider whether or not it is, in fact, a major Federal action and go through the regular NEPA process?

Lieutenant Colonel HILL. I would think NEPA would already cover that, Mr. Chairman.

Mr. LEGGETT. I would think it would, too, except apparently it hasn't in the past.

Lieutenant Colonel HILL. Certainly there are people here far more expert on the scope of NEPA with respect to those things than I.

Mr. LEGGETT. General Kuci, in the record we had inserted about a dozen instances where you apparently had some limitations, I believe it was at Camp Lejeune, N.C., where the presence of red-cockaded woodpeckers and softshell sea turtles has allegedly impeded combat training on 1,710 acres; is that true or not?

General KUCI. Let me clarify this statement.

We have 86,700 acres at Camp Lejeune. The red-cockaded woodpecker has impacted on 1,710 of those acres. That consists of about 27 colonies of those birds. About nine colonies of those birds are concentrated and encroach on our mechanized infantry training area, which also includes a combat training village. That encompasses 676 acres, which is roughly less than 1 percent of our total acreage.

Our position is that this encroachment has thus far not critically impacted on our training and readiness. I would emphasize two words. One is not critical at this stage of the game—and we're concerned about the unknown, something else popping up, or if these birds expand and become more prolific or, let's say, they migrate to some other part of that base which would become more critical.

Mr. LEGGETT. "Thus far," that's the important part of your statement, too?

General KUCI. Yes, sir.

Mr. LEGGETT. Of course you're aware they talked about 3,000 plant species and animals?

General KUCI. Yes, sir.

Mr. LEGGETT. That must cause some palpitations in your defense-preparedness heart.

General KUCI. Yes, sir. All of us recognize the unknown is what concerns us, and also the funding to provide for the protection of the animals.

Mr. LEGGETT. Would you say the 1,710 acres is now excess to Camp Lejeune's needs?

General KUCI. No, sir, I would not say that. What is happening is, of that 1,700 acres, there are colonies scattered around the base. The 676 acres exists in that mechanized training area, which encompasses a total of about 3,400 acres.

What we have had to do is slice out that 676 acres and sort of isolate it, and then we have added another 700 acres adjacent to it, so our mechanized equipment can move around that impacted area.

We are also exploring another area on the base to move our mechanized training area to. As soon as we get an environmental impact statement completed on that, then there is the potential for us moving to another area.

Mr. LEGGETT. As I understand, the commander of that base received the Marine Corps environmental award for the year for his activities?

General KUCI. That's correct, sir.

Mr. LEGGETT. And thus far, this kind of carve-out from a big base is not what you would call critical?

General KUCI. No, sir.

Mr. LEGGETT. You are concerned about the unknowns?

General KUCI. Yes, sir, we're concerned about the unknowns and also we are concerned, if there's an extensive recovery program and these birds expand in that area—let's say you wake up some day and there's another more critical area of the base, then that's the unknown we are unable to answer at this stage.

Mr. LEGGETT. Would you be bothered by a test that provided for protection to the maximum extent feasible?

General KUCI. I think we have done that. I think we have protected that area to the maximum extent feasible.

Mr. LEGGETT. I'm not exactly sure that we've got the feasibility latitudes. As I understand, we have to effect maximum protection under the current letter of the law.

General KUCI. That's correct, sir.

Mr. LEGGETT. Mr. Beard, do you want to ask any questions here?

Mr. BEARD. I need to leave, and I do appreciate your courtesy in allowing me to come here. I appreciate your hospitality.

Mr. AuCOIN. I will yield to the gentleman.

Mr. BEARD. First of all, I would like to ask—and this is a question for the Marine Corps and the Army. I looked at an environmental impact, two big volumes, that were prepared for the Army as a result of a possibility of a division returning from Korea to the United States, that did an environmental impact study relating to endangered species and, along with other things, as to what bases in this country could receive a division without having adverse environmental effects.

In almost every single base in the Southeast I found they had present as an endangered species the red-cockaded woodpecker. Now, the only places they are really able to enforce this law is on Federal lands or on Federal projects. And yet to find this bird on every single base in the Southeast, I became somewhat confused.

If there are that many on the bases, how many are right outside the fence? And is it not true, as a matter of fact, that at Camp Lejeune the birds are continuing, as they find this is a pretty nice neighborhood to live in, because they've got signs protecting them, and the guys are running around saying nobody can fool around in here, that it gets a little crowded and they move to another tree, and then move to another tree, and have kind of started taking a little bit here and a little bit there.

Has this not been the case?

General KUCI. I don't believe I could definitively prove that, sir. We have identified thus far, like I said, 27 colonies. As we keep looking into this, maybe we'll find more.

I understand also that the bird is not that prolific and does not multiply that rapidly. We are sort of hoping it will move away and go someplace else and not continue to bother us. That's hard to determine at this stage.

Mr. BEARD. Am I not correct in stating it's at almost every single military base in the Southeast?

Lieutenant Colonel HILL. Mr. Roche would probably be better able to answer that, sir. I'm here just for the civil works activities of the Army—

Mr. BEARD. Mr. Roche?

Mr. ROCHE. Yes, sir, the red-cockaded woodpecker is found on many of the bases in the Southeast, mainly because of the fact that at many military bases we have large stands of pine trees, the over-age mature pine trees. This is what the red-cockaded woodpecker likes.

Mr. BEARD. In other words, you feel there are not any of these things around outside these bases or elsewhere?

Mr. ROCHE. It's mainly in the southeastern area. Of course, it's not just the military bases, either. Weyerhaeuser's and Georgia Pacific's timber stands have the same problem.

Mr. BEARD. How long have you been in this particular job, Mr. Roche?

Mr. ROCHE. Eight years, sir.

Mr. BEARD. Your statement here today I have just read. Did you write that?

Mr. ROCHE. Yes; I did.

Mr. BEARD. Did you have to submit it to anyone for their approval?

Mr. ROCHE. I submitted it to my superiors and to public affairs for clearance.

Mr. BEARD. Were there any changes made at all?

Mr. ROCHE. No, sir.

Mr. BEARD. In other words, you feel absolutely and totally comfortable. Did you state in here that you're against any amendments to this particular endangered species bill?

Mr. ROCHE. We're saying we see no need to support any legislation at this time. It's not in the statement, but I answered that way in response to the chairman's question.

Mr. BEARD. In other words, with hundreds of plantlife and fauna waiting to be added to the list, you feel totally comfortable with that?

Mr. ROCHE. We say in our statement we're a little bit apprehensive.

Mr. BEARD. But you feel through the consultation process there will be no problems?

Mr. ROCHE. As we see it, that's right.

Mr. BEARD. What exactly does the consultation process entail? Is it a phone call or sitting down or—I mean, where is the flexibility? They keep referring to 4,500 consultation processes, the majority of which have been a phone call, and the statement being made, "Well, look, the endangered species is there so you'll have to make adjustments" and that's the end of the consultation.

Mr. ROCHE. We've only had one major consultation to date, and that is still ongoing. That has to do with the forestry program at Fort Bragg. The consultation is taking place among the local military commander, the major commander, and the regional office of the U.S. Fish and Wildlife Service.

Mr. BEARD. General, do we not have a lawsuit against the Marine Corps and the Navy as far as one of our planes bombing one of these areas of endangered species that just recently came about?

General KUCI. There was the initiation of one, I believe, out in Hawaii for some of our ranges. It's specifically called Kaula Rock,

out in Hawaii. That is being handled, I believe, by the local attorneys and military law people.

Mr. BEARD. But as a result of that, we're no longer able to use that right at this time?

General KUCI. We were temporarily halted from using that range. It is under the jurisdiction of the commander of the Third Fleet. We went back to the Third Fleet and asked what's the status, and they said to use it under the established guidelines. We are back using it again now.

Mr. BEARD. Where is this other area of Camp Lejeune you are now considering as an alternative to the training for mechanized infantry?

General KUCI. From the area where it exists now, it's about 8 miles.

Mr. BEARD. It's 8 miles further——

General KUCI. About 3 miles from the tank park. You either go southeast to the present area, or you go 3 miles to the northeast to the other area. It will be a couple of miles more distant than what we're traveling now. That would cause us to make some adjustments in our training schedule, which we have done at Camp Lejeune to work around that situation.

Mr. BEARD. Therefore, I am not crazy or imagining or overreacting when the battalion commanders and S-3's and platoon commanders told me that as a result of these red-cockaded woodpeckers and the way they were marking areas off, it was a detriment at this time to their tactics, whether it be envelopment or whatever, that they were having problems and it was causing quite a bit of headaches?

General KUCI. Yes, sir, it has an impact on the mechanized training. We have had to make adjustments. It does put some artificialities in the program, much the same as if you have a stand of hard timbers and the tanks have to go around that, or a swamp and the tanks have to go around that. It's almost an identical situation.

Mr. AUCOIN. Did the gentleman say the woodpeckers were moving into other areas?

Mr. BEARD. They're expanding.

As far as that particular area they're in now, the statements I have received down there is there's a little bit more area here and there that has been marked off.

General KUCI. This is something we're watching closely, but I can't definitively say they're moving or migrating. This is our concern, whether they are expanding or not, and if they do——

Mr. AUCOIN. Into areas which are otherwise used by military operations?

General KUCI. Yes, sir, more critical areas.

Mr. AUCOIN. That sounds downright subversive to me. [Laughter.]

Mr. BEARD. You know, these birds have lived there for quite a long time with our tanks operating in that area, have they not?

General KUCI. This is something I haven't been able to determine. We rely on the environmentalists to tell us whether it's compatible for us to have troops in the area; is it compatible to

have mechanized armor there. We don't know. There are many answers we have to get to resolve this.

So for the time being we are just terminating the heavy operations in that area.

Mr. BEARD. At what point in time would you feel like you would need to come forth and maybe express a strong concern, which you have not done in your statement, as far as where the line will be drawn? I mean, the way this act is going, with all the million-and-a-half or whatever species, and with hundreds waiting to be added to the list, do you feel you can sit back and not say a word and really can't express a strong concern at this time, or are you just going to wait until it happens and then maybe try to correct it or what? Is there any point in time——

Mr. ROCHE. I think the problem may be overstated. Take a look at the endangered wildlife, some 190 designated species at this time. Only about 33 exist or have been identified at military installations. And recognizing they are there, we can avoid any impact on them.

I think we may be chasing a ghost on the endangered plants, too. There are some 1,753, I think, species listed by the Smithsonian several years ago, but as of several weeks ago only 4 plants have been designated. Just last week, of course, 13 more were——

Mr. BEARD. How many are waiting, Mr. Chairman? How many are waiting to be placed on the list at this time?

Mr. LEGGETT. We have 1,700 plants waiting, and I think a large part of the failure to list is the fact that the budgets of the Fish and Wildlife Service and the Endangered Division have been emasculated, so that really they have only been funded at about 50 percent of what they feel they ought to have in order to do this job.

Mr. ROCHE. But of the original 1,700 and some odd, there are now only 1,400 remaining on the list for determination of threatened or endangered species.

Mr. BEARD. That makes me feel a lot better, then, I'm sorry. It's 1,400 versus 1,700.

Mr. ROCHE. And of that difference, only 15 species have been so designated. So the odds have been cut down quite a bit.

Mr. BEARD. I just sit here in total amazement and listen to you sit there and say the problem is over dramatized. I think that is absolutely closing of the eyes to the potential problem.

You know, when is the last time you have been to the bases and talked to some of the troops and some of the base commanders off the record; how many times have you done that?

Mr. ROCHE. Sir, I go six times a year. I was at Camp Lejeune last year. I have been to Camp Lejeune five times in 8 years.

Mr. BEARD. Did you talk to any battalion commanders down there?

Mr. ROCHE. Yes; we did.

Mr. BEARD. Did you talk to them specifically about this subject? Did you go out training with them?

Mr. ROCHE. We went out into the endangered species area, went over by combat village; we talked to the gunnery sergeants and talked to everybody who had an interest in this problem. We have perceived no real problem.

Mr. BEARD. You must have had another bunch than the time I was down there just kind of hanging around.

Mr. Chairman, you have been most gracious in giving me this time. I do appreciate it and your interest in this.

Mr. LEGGETT. Fine. We certainly have brought out a number of different viewpoints, and that's what we try to do in these hearings and make our conclusions thereafter.

Thank you very much, Robin.

Les, any questions?

Mr. AUCOIN. Not at this time.

Mr. LEGGETT. Very good, gentlemen. You have all been very helpful.

Now, do you have regulations in the Department with respect to protection of the endangered species?

Mr. ROCHE. Yes, sir. Our basic directive having to do with the management of real estate does include a paragraph with regard to the protection of environmental values. One of those values is the endangered species.

We also have a directive which specifically addresses fish and wildlife management, and that is now being rewritten to put more emphasis on endangered species protection.

Mr. LEGGETT. All right, if you could provide us with a copy of all your regulations that pertain to this, that would be helpful.

One more question, Colonel. To your knowledge, are any of your corps projects that you have currently authorized in danger of being affected by the endangered species litigation?

Lieutenant Colonel HILL. Yes, sir. Only last week—and we haven't had a chance to get the details here in Washington yet—a suit was filed involving the Libby Dam on the Kootenay River in Montana for the bald eagles. It's a new suit and it involves, as I understand, the ameba count, the endangered species count.

Mr. LEGGETT. What's the status of that project?

Lieutenant Colonel HILL. The Libby Dam is completed. This involved a re-regulating dam downstream, about double the power output of the dam, and the eagles had been attracted to the downstream area of the dam because of the fish that come through the turbines in the other area. So this would involve alterations in that area, that we had been planning to provide for the eagles, and are in active consultation with the Fish and Wildlife Service.

A good bit more information is required before they can—

Mr. LEGGETT. If you can give us complete background on that project, that would be helpful.

Are there other corps projects that you have that are in jeopardy of attaining a Tellico imprint, if you understand me?

Lieutenant Colonel HILL. There are a number in various stages of either consultation, or in the case where the species have been listed, or are supposed to be listed, where there might be possible. Of course, I think everybody is aware of Dickey-Lincoln. That has been amply treated by the press and everything, probably not as objectively as it could have been—

Mr. LEGGETT. Is Dickey-Lincoln abated?

Lieutenant Colonel HILL. No, sir. We are just today starting official consultation because we had to wait, of course, until the species was listed. It was just listed last month.

Mr. LEGGETT. Has the critical habitat been designated?

Lieutenant Colonel HILL. It has not been designated. That would be a part of this ongoing consultation process that is being conducted between our people and the Fish and Wildlife Service people. Much will depend upon how that process—

Mr. LEGGETT. Is that one of the reasons you support a feasibility test under section 7?

Lieutenant Colonel HILL. That would certainly be a good rationale; yes, sir.

Mr. LEGGETT. And you don't support that, Mr. Roche?

Mr. ROCHE. We see no need for it, sir.

Mr. LEGGETT. Are you aware of the project he's talking about?

Mr. ROCHE. No, sir. We have no direct cognizance over the civil works projects of the corps.

Mr. LEGGETT. So you're just speaking for the military side?

Mr. ROCHE. Yes, sir.

Mr. LEGGETT. Very good.

We will leave the record open here and perhaps we will be propounding additional questions to you. If you could answer those with due dispatch, that would be helpful.

And you will provide the comments, approved or unapproved, of the Department of the Army on the referenced legislation?

Mr. WOOD. I shall.

Mr. LEGGETT. All right. That will be helpful.

Next we will hear from the distinguished Chairman of the Council on Environmental Quality, Charlie Warren. You can identify all the folks you have with you, Charlie.

STATEMENT OF CHARLES WARREN, CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY; ACCOMPANIED BY LEE TALBOT, ASSISTANT TO THE CHAIRMAN

Mr. WARREN. Mr. Chairman, I am accompanied by Dr. Lee Talbot, who is assistant to the Chairman, and we thank you and appreciate the opportunity to appear before you today to discuss the history and accomplishments of the Endangered Species Act—

Mr. LEGGETT. I might state that when we finish with this witness we will adjourn until approximately 2 o'clock, at which time we'll hear from Jack Gehringer from NOAA and George Steele and Bob Wagner from the American Association of Zoological Parks and Aquariums.

Please proceed. Your statement will be included in the record as though you read it.

Mr. WARREN. Mr. Chairman, I suppose it's no surprise to you that it's the considered position of the Council on Environmental Quality that the Endangered Species Act at the present time is in no need of amendment, that an amendment is not necessary and, in any event, certainly considerations of such are premature.

I think the statement contains some interesting history which might benefit the members of this committee in determining the manner and means of implementing the act in the years since Congress, in its considerable wisdom, enacted it.

Questions have arisen concerning its flexibility, and it would seem to me from the testimony I have heard from the witnesses

before this committee that the flexibility is to be found in the modification and litigation measures which are permitted in the consultation process.

Second, I think I would like to spend just a moment on an observation made by Mr. Forsythe, and that is, we believe the coordinating procedures which are provided in the revised—in the proposed regulations will greatly assist agencies confronted with implementing the—in complying with the Endangered Species Act, who have ample time in their planning process for their activity to deal with whatever problems may arise in a manner which Congress contemplated when it provided for the consultation process.

We think the proposed regulations will assist to a great extent in the elimination of the problems of the type that have arisen under the implementation of the Endangered Species Act.

With that I think I'll close and Dr. Talbot and I will be available to you for any of your "hard rock" questions.

Mr. LEGGETT. Thank you very much.

Now, how does this consultation process work here?

A military commander, for example, wants to change his military maneuvers. Instead of operating in one area of 500 acres within 80,000 acres of overall base complex, he wants to move into another 500 acres, because perhaps he has to use some mechanized vehicles and that 500 acres is better terrain.

How do you envision that he handle that situation? At that point does he go out with his biologists and go over the area and then consult with the Fish and Wildlife Service, or does he wait for some environmental group to file a complaint? Exactly how does he handle that? How do you envision the program working?

Mr. WARREN. Not quite as the chairman described, because I think we all recognize that man is an imperfect animal and is obliged at most to conform to the standards of reasonableness. I do not think any activity which is being considered would require microscopic examination of various species that may or may not be endangered. But I think a reasonable effort is required. If notice is given, or that effort reveals the presence of an endangered species, then the proposed action should be reviewed for the purpose of determining if it cannot be modified in any manner, which would permit the continued existence of the species.

As the statement indicates, the act does not require a man to abandon all his activities in a habitat involving an endangered species, but rather, to avoid those actions which will affect their existence.

Mr. LEGGETT. Let me ask you this: Will you take the position that we need no amendment to the act at this point? Are you aware of all of the corps projects and Bureau projects which may be affected by the Endangered Species Act at this point?

Mr. WARREN. Yes, sir, we are.

Mr. LEGGETT. Have you reviewed them?

Mr. WARREN. We have not reviewed them, but we do know. There was very interesting testimony from the civilian representative here for the Department of Defense, Mr. Roche, when he suggested there are 300 species approximately reviewed on the list prepared by the Smithsonian, but only 30, I believe, had been so designated.

Now, when you deal with 1,400 on the list, how many of them ultimately will be designated as endangered is, as you put it, a "ghost." I think your use of that word is very instructive and revealing.

For the most part, the problems that have been discussed by the witnesses are "ghosts." Whether there is substance to those ghosts remains to be determined. And if after time there does appear to be substance, then the issue should be dealt with.

But I think there is no evidence to suggest that the consultation process, the mitigation and modification remedies available have not been adequate to deal with these problems, with these ghosts, because once dealt with, once confronted, they disappear. It does not offend me to suggest to a battalion commander that perhaps his activity should take place 2 miles distant from a place they have been marching up and down in order to preserve a threatened species, an endangered species, a woodpecker whose habitat has been limited by man's activities to those areas now being used for military purposes.

Certainly, if the species thrives in this particular habitat, then perhaps the presence on the list can be reviewed. In point of fact, it's my information—and I must say I don't have too much evidence in support of this—but my information is that much of the resources of the agency responsible for implementing the act are presently reviewing the species on the list for the purpose of removing them. We would prefer to see those resources being put to the determination of whether or not the species should be put on the list, rather than their removal.

Mr. LEGGETT. Are you familiar with the Dickey-Lincoln project?

Mr. WARREN. Yes. Senator Muskie called that project to my attention when I was confirmed.

Mr. LEGGETT. Is it your impression that project can continue despite section 7?

Mr. WARREN. I believe there is uncertainty that—Well, what was believed some months ago to exist is now—

Mr. LEGGETT. I would like your belief today.

Mr. WARREN. What I'm saying is, there is less certainty about the application of the furbish lousewart than there was a year ago. I'm not sure if the critical habitat has been determined—I will yield to Dr. Talbot on this—but it is my impression there is no certainty that that project will be held up by reason of the application of the act on the furbish lousewart.

Mr. LEGGETT. And to the contrary, you can't assure me that it will proceed, is that right?

Mr. WARREN. Right. But let's let the consultation process work, and if it does appear somewhere along the line that the application of the act may, in fact, apply to the project, then let's determine if the project can be modified or if it can be litigated, to let the process work.

Mr. LEGGETT. You're aware, of course, that project was exclusively a power project?

Mr. WARREN. It's a very suspicious project, if you want to get into its human benefits.

Mr. LEGGETT. It has been very contentious in the Congress and with all of the power companies in the Northeast—

Mr. WARREN. In Boston.

Mr. LEGGETT. Well, Connecticut and all over. But they are deathly against that project because they are deathly opposed to public power. As a result, it has been a classic public power-private power confrontation.

It's one of those rare projects that we already have too much of in California, where apparently the project has no direct benefit, no water benefits, and primarily it is a hydropower, peaking power project.

Mr. WARREN. Yes; very expensive peaking power.

Mr. LEGGETT. Congress has acted on that, though, too many times.

Mr. WARREN. And perhaps, if I may suggest, improperly.

Mr. LEGGETT. Anyway, it really doesn't bother you that the project might be abated by the lousewart at this point?

Mr. WARREN. No; I can't say it doesn't bother me. I respect the wisdom of the Congress, I really do, even when I disagree with them—

Mr. LEGGETT. Since there apparently is some weighing or some reasonableness attached to the consultation process, do you not believe there ought to be some reasonableness test applied to section 7?

Mr. WARREN. I think in practical terms that probably such a test exists, and I think it exists and is experienced in the consultation process because—

Mr. LEGGETT. If you look at the statute, then you really wouldn't be adding anything.

Mr. WARREN. Well, it depends on what you put in. I am suggesting that the consultation process itself provides the opportunity for the application of reason, and there are a number of decisions that have to be made, and adjustments, and in making those decisions and identifying those adjustments the rule of reason applies. I think so.

I have not personally been involved directly in the consultation process, but it seems to me inherent in the process itself that there are many points at which the participants must be reasonable and must make decisions reasonably.

Mr. LEGGETT. Very good. I think if we can get reasonable people to interpret the act, that is all we need.

Mr. WARREN. That's an ambiguous statement, Mr. Chairman. [Laughter.]

Mr. LEGGETT. Certainly no slur or slam was intended.

Mr. WARREN. I don't know whether to be joyful or depressed.

Mr. LEGGETT. You know, the *Tellico Dam* case was affirmed today, and that's what is on everybody's mind.

Mr. WARREN. Yes, 6 to 3.

What bothers me in that case is that apparently the court felt that under section 7 there could apparently be no weighing, and they determined the critical habitat had been designated; and if there was a 1-percent infringement on a designated species there, why necessarily the Federal action had to abate, irrespective of how anybody else may have felt about it, or whether or not the project was even considered at the time the critical habitat was designated. That causes me some concerns.

In that instance the provisions of the act were applied as Congress wrote it, and I believe as Congress intended. I think that where it failed—and I do not believe it should have failed; I think it's failure could have been avoided—but the failure was in the determination by the agency involved that it was not subject to the act. It has taken that position throughout the process. It has contended—it contended before all the courts that (a) the act did not apply to it, and if it did, did not apply to this project because it was already under construction prior to even a very small degree when the act was passed.

My understanding of that situation is that the TVA throughout has been intransigent, did not participate in good faith in the consultation process, and in fact, the recent statement by the new Chairman of the TVA indicated that even now he felt the project could be satisfactorily adjusted to meet the provisions of the act.

I frankly think that—I do not see how the Supreme Court could have possibly disagreed with the lower court decisions interpreting the act. And even with the decision today, I suspect that the Chairman of the TVA and those responsible of administering the Endangered Species Act will be able to come to some adjustments.

It's a shame the money was improperly spent by the intransigents, in my opinion, in this administration of—

Mr. LEGGETT. I don't think you need to isolate TVA. Obviously all Federal agencies have had a complete reappraisal of their activities in light of the *Tellico Dam* decision, and we know that fact to be occurring.

Mr. WARREN. And have made adjustments.

Mr. LEGGETT. Yes, they have made adjustments. And so to merely say TVA was not complying on an existing project is perhaps an unreasonable isolation of one agency. If they were culpable, I would suspect all agencies are reasonably culpable.

Mr. WARREN. My only point was that as far as I know this TVA was the only agency which determined that, at the earliest, that the application of the act in this particular activity would be contested and contested in court. They came to the Congress for an appropriations hearing and advised the appropriate committees of Congress that the act did not apply to that project. It was on that assurance the Congress continued the appropriation.

In fact, in 1975 or 1976, the Congress gave TVA more money in order to help them in the proposed litigation. It seems to me Congress has been misled concerning that particular project of the application of the Endangered Species Act. The effect of it was revealed by the court decisions which have been unanimous, from the lower courts to the Supreme Court.

Mr. LEGGETT. I think the letter of the law is fairly plain. Regardless of what Congress intended, I think the plain meaning of the law has been taken from section 7. It says what it means and it means what it says on its face.

Mr. WARREN. That's fine, and we will have good examples of those. Congress hopefully will be here and will be able to review in an oversight way these laws and maybe make the adjustment when the need is clearly demonstrated. But until that need is clearly demonstrated, let's don't make the mistake of coming down against the maintenance of endangered species.

If we err, let's err on the side of preserving species, because there is so much that is not known about their value, not only to human beings, but to the entire world community.

As you are aware, there is shared the principle that when you don't know nothing it's imperative—well, let me rephrase that. When you don't know the answer to a particular problem, it's imperative that you don't do anything.

I would suggest that we are still not clear on what needs to be done, if anything.

Mr. LEGGETT. Your caution is justified.

Mr. Bedell?

Mr. BEDELL. Have environmental impact statements ever been done on the process of designating the critical habitat?

Mr. WARREN. I heard the chairman's question, and I must say I cannot answer it. I agree with his conclusion—

Mr. LEGGETT. Not in every case is it a major Federal impact, but in many cases—

Mr. WARREN. Yes.

Mr. LEGGETT. It certainly could be.

Mr. BEDELL. So there is no bar against that happening.

Under your new regulations, could a habitat designation in fact be subject to a study?

Mr. WARREN. Well, Dr. Talbot indicates he believes there was a generic environmental impact statement.

Dr. TALBOT. On the process as a whole. That does not preclude the need for a specific one on certain specific projects that arise. But if this is true, it would indicate you don't necessarily have to have an EIS for every one that is set up.

The same thing was done with the Endangered Species Act, with its implementation at the very start. A generic statement was done.

Mr. BEDELL. I notice Congressman Forsythe earlier expressed his opinion—and you may have heard it, Mr. Warren. He was very much gratified in looking over these new regulations that you're putting out, and he hopes they will be substantially implemented in the form he has seen them.

Now, we wanted to especially note you have, in fact, mentioned the Endangered Species Act in section 1502.25, I believe, and also we find it very salutary that you emphasize the integration of environmental reviews.

I think we do feel that many of these problems can be solved, perhaps certainly the majority of them, if we get at the problem early on. But as I think you heard a few weeks ago, of the problem of some folks from Alabama, for instance, we came back to this business of designation of the critical habitat and also the designation of what, in fact, an endangered species is, and the fact that people don't feel they have access to those decisions. They are not really sure that things are being done in a completely objective way, that if fact, by not having enough people available, for instance, to consider all the petitions placed before them to get species on the endangered or threatened list, that in fact what we're having is a situation where some scientists, well-meaning and qualified people, but people not in a policymaking job, are in fact, by their limited numbers and limited ability to pay attention to

these petitions, are forming some sort of policy and priority system as to which species are being attended to and which ones are then being afforded protection by being listed and by having critical habitats designated.

The argument would then go, why shouldn't Congress, in its responsibility to the people, perhaps be the one making that, or setting those priorities and making determinations as to what species ought to be considered, rather than the folks in an agency downtown who don't have direct responsibility to the people of the United States through elections.

I guess that's not much of a question, but that sums up the sort of problem that has emerged in the hearings we have had so far.

Mr. LEGGETT. Your commentary will be included in the record. [Laughter.]

Mr. WARREN. Thank you, Mr. Chairman.

Mr. LEGGETT. It's the luncheon hour, and I appreciate very much your coming down here. Your views are very helpful to the subcommittee.

We will stand in recess until 2 o'clock.

[Whereupon, at 12:42 p.m., the subcommittee recessed.]

AFTERNOON SESSION

[Whereupon, at 2:13 p.m., the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries resumed, Hon. Robert L. Leggett presiding.]

Mr. LEGGETT. The meeting of the subcommittee will please come back to order.

We are very pleased to have as our next witnesses two distinguished gentlemen, George Steele, representing the Zoo Action Committee, Inc., and Bob Wagner, representing the American Association of Zoological Parks and Aquariums.

We are very pleased to have both of you gentlemen here, and we are very pleased to have your statements, which will be included in the record. You can go ahead and make such commentary as you care to.

[The following was received for the record:]

STATEMENT OF GEORGE E. STEELE, JR., ON BEHALF OF THE ZOOLOGICAL ACTION COMMITTEE

Good afternoon. I am George Steele, Executive Director of the Zoological Action Committee, a non-profit, national political action organization representing zoological institutions, public and private, zoological suppliers, private wildlife breeders, and individual citizens interested in preserving and promoting zoological institutions.

Thank you for the opportunity to appear before your Subcommittee today during the oversight hearings on the Endangered Species Act. My remarks will be brief as ZOOACT's position regarding the Endangered Species Act corresponds with remarks presented earlier by the Executive Director of the American Association of Zoological Parks and Aquariums (AAZPA), Mr. Robert Wagner. However, I would like to reiterate and emphasize a few major points brought forth by Mr. Wagner which, in our opinion, are critical to the effective management and operation of the Endangered Species Act.

As you know, the Department of Interior, Fish and Wildlife Service, recently published an advance notice of a proposed rulemaking dealing with captive wildlife regulations. At the outset, let me say that we are extremely gratified that the Fish and Wildlife Service is recognizing that existing regulations on the movement of

captive born endangered species in commercial transactions have interfered with the captive propagation of endangered species, and create obstacles to the effective propagation of such wildlife.

Although ZOOACT members strongly support relaxation of the existing Fish and Wildlife regulations dealing with the movement of captive born endangered species, we will continue endorsing Interior's stringent regulations for the taking of endangered species from the wild. The existing import/export restrictions protecting wild populations are the very backbone of the Endangered Species Act, and are essential to the survival of endangered species in wild populations. I would also like to add, Mr. Chairman, that while we believe the Fish and Wildlife Service has done an effective job in implementing the permit requirements for the taking of animals from the wild, we should also like to reiterate our previously stated position that more funding and program activity should be directed to preserving the rapidly vanishing habitats of endangered species throughout the world.

As this Committee is aware, regardless of what action is taken within the United States, more wildlife species will continue to be endangered until such time that we can provide the leadership and motivation, both financial and otherwise, to secure international cooperation in protecting vanishing habitats of endangered species. We again emphasize that the present permit process for captive born endangered species, discourages rather than encourages the critically needed captive born breeding of endangered species by qualified zoological institutions.

The intent of the Endangered Species Act was to provide protection for species faced with extinction, and to protect habitats in which these animals are found. However, captive animal management and captive breeding programs have been severely impaired. The fact of the matter is that captive breeding has terminated in many of our nation's zoos. Because of the permit procedure required to buy or sell captive born endangered species, the demand has fallen to virtually zero. The Act was designed to reduce the demand for endangered species, but this reduction of species was to be for animals taken from the wild, not bred in captivity.

Mr. Chairman, during our testimony before the Senate Committee on Commerce in 1976, we suggested a proposal that endangered species born in captivity, as well as those held in captivity prior to December 28, 1973, for commercial purposes, be listed in a separate category as "threatened species." We further testified that if all pre-Act animals and those born in captivity were to be a separate category, as "threatened captive species," under such a proposal the captive born species would continue to be under the Secretary of Interior's control, but would be regulated by a simpler process. Thus, as you can see from our previous testimony regarding captive born wildlife, we believe our proposal is consistent with alternative number two set forth by Interior in its recently published advance notice of a proposed rule dealing with captive born wildlife.

In essence, Mr. chairman, what we would like to see is for qualified zoological institutions to be able to transfer any captive born species to any other qualified institutions, so long as a qualified zoo professional certifies to the Department of Interior that the receiving institution is capable of caring for and handling the animal which is being transferred. Should this proposal be adopted by the Department of Interior, the Secretary will have the authority to provide for a record keeping system which would require all persons trafficking in captive born endangered species to complete and return forms provided by Interior upon the shipping of captive born endangered species. Mr. Chairman, we believe that this internal safeguard will provide Interior with the necessary authority to control the captive born endangered species transfer process, allowing them to easily monitor the movement of these species.

ZOOACT and AAZPA believe that the re-classification of captive born endangered species to a "threatened" category is in line with the recently published Senate Committee on Environment and Public Works Report, which stated that many zoos are presently encountering unnecessary problems as a direct result of Interior's stringent and burdensome process for the regulation of captive born endangered and threatened species. Further, the Senate report advises the Fish and Wildlife Service to re-examine their regulations and to make every effort "to ensure that only those regulations which result in real benefit for wild populations of endangered and threatened species are retained." We believe that Interior's suggestion to relax captive born endangered and threatened species transfer requirements directly corresponds with the Senate Report language, and it is our hope that such a change in the regulations will be forthcoming in the near future.

In summary, Mr. Chairman, I would just like to add that the advantages of a relaxation of captive born transfer requirements will further the major purposes of the Endangered Species Act by encouraging the breeding of captive born species.

Lastly, relaxed regulations would enable Interior to remove burdensome and time consuming efforts presently devoted to the captive born endangered species regulatory process, and would empower them to spend more time and effort in what we think is a greater need, namely, controlling the taking from the wild, and enhancing the protection of the critical habitat of endangered species in the wild.

This concludes my statement and I will be very happy to respond to any questions the subcommittee may have. Thank you.

STATEMENT OF ROBERT O. WAGNER, ON BEHALF OF THE AMERICAN ASSOCIATION OF ZOOLOGICAL PARKS AND AQUARIUMS

Mr. Chairman: My name is Robert Wagner. I am the Executive Director of the American Association of Zoological Parks and Aquariums (AAZPA). I thank you and members of this committee for the opportunity you accorded us in providing testimony for this oversight hearing dealing with the vitally important Endangered Species Act of 1973.

The AAZPA represents virtually every zoological park, aquarium, wildlife park and oceanarium in the Americas and nearly all of their professional staff members. We also represent animal suppliers, who furnish our institutions with wildlife specimens, and the more than 250,000 zoological and aquarium society members, who offer support to our institutional members. the AAZPA is the largest professional organization representing zoological parks and aquariums in the world.

Mr. Chairman, we have appeared before this and other committees in the past providing testimony referencing the Association's opinion on the regulations promulgated by the United States Department of Interior regarding the Endangered Species Act of 1973. We have also held, and continue to hold, that we are totally supportive of the promulgated regulations regarding the taking of endangered species from the wild. We have also been most supportive of Interior's efforts at protecting the rapidly diminishing habitat on which this world's fauna is making its stand at survival. In fact, we have urged that Congress consider increasing funding necessary for the Department of Interior to carry out the intent of Congress in these above described areas.

Since early in 1974, members of the profession and I have repeatedly requested relief from the Department of the Interior regarding their very stringent regulations promulgated for the movement of endangered species which are born in captivity. We have stressed that these regulations are counterproductive to the intent of the Act and have provided suggestions for ways in which the intent of the Act could be fulfilled without the burdensome and restrictive requirements on the movement of captive-born wildlife. We are very pleased, Mr. Chairman, with the recent activity on the part of USDI in their publication in the Federal Register of an advance notice of a proposed rulemaking which specifically comes to grips with their regulations on captive-born wildlife. The Department of Interior states in this advance notice that the existing regulations on the movement of captive-born endangered species in commercial transactions have interfered with the captive propagation of endangered species and that their present strict application of prohibitions on the movement of such wildlife may be creating obstacles to the effective propagation of such wildlife. We have officially responded to the Department of Interior on the advance notice of a proposed rulemaking, and I am attaching a copy of our response to this statement for the record. There were many individuals within our profession who responded in the same general manner and that is to the extent that the Department of the Interior should continue to very stringently regulate any attempts at removing endangered species from the wild and should dramatically increase their staff time at defining and protecting dwindling wild habitats.

The Department of the Interior has accorded individuals or institutions holding endangered species in captivity some minor relief via their promulgation of rules which were captioned "Captive Self-Sustaining Populations." While the Association applauds these earlier efforts, we have stated to the Department, and reiterate to this committee, that the CSSP regulatory scheme simply is not working nor addressing the needs of animals in captivity. Moreover, few zoological parks and aquariums have applied for a permit under the CSSP regulations because the Department of the Interior has determined to date that only eleven species of wildlife qualify for CSSP. We informed this committee during the last oversight hearings that Interior's track record with reference to CSSP designations indicated that it would take them beyond the year 2000 to properly designate all qualifying candidates for CSSP.

Mr. Chairman, the report recently published by the Senate Committee on Environment and Public Works specifically requests the Department of the Interior to

meet the needs of zoological parks. The report did so in the following manner: "In oversight hearings concerning the Endangered Species Act, the committee also received testimony from organizations representing zoos. These witnesses were skeptical of the necessity for the stringent and burdensome process developed by the Fish and Wildlife Service for regulations of their captive-bred endangered and threatened species. The committee advises the Service to reexamine these regulations and the rationale upon which they are based in light of this testimony, and to make every effort to insure that only those regulations which result in real benefits for wild populations of endangered and threatened species are retained. In any event, every effort should be made by the Service to reduce the amount of paperwork and time involved in this regulatory process."

It is essential that we point out to this committee that the Association continues to believe that the Department of the Interior can accord necessary relief in the regulatory process, thus obviating any need for an amendment to the ESA. We wish to reiterate that we have not requested an amendment according our members relief to transact their necessary business in the movement of captive-born wildlife. We also wish to inform this committee that the Association is in opposition to S. 2899, even though the Bill accords relief from the provision of the Endangered Species Act for all raptors hatched in captivity. S. 2899 specifically deals with what we feel is an emasculation of Section 7 of the Endangered Species Act. We feel that Section 7 is the very lifeblood of the Endangered Species Act. While it is recognized that the Department of the Interior and interested parties have not been able to reach an agreement on the vital issue of the Tellico Dam/Snail Darter question, we respectfully point out that with the exception of a few isolated cases, the consultative provisions of Section 7 have proved to be both meaningful and workable. We are very concerned at any lessening of the existing provisions of Section 7 in that the protection of the critical habitat of the world's wildlife is even more vital than the protection of the wildlife itself. We, along with others, are entrusted in holding remnant collections of rare and endangered species; and we are already involved in some reintroduction. While we want very much to protect the world's dwindling wildlife, we want more to protect the world's critical habitat upon which many species are making their last stand.

In summation, we again stress the need for Interior to relax regulations on the movement of captive-born endangered species, to accord them more time and money to expand their efforts at protecting endangered species in the wild and to define and protect critical habitat. Also, we presently oppose any amendments to the Endangered Species Act and request the Congress to provide sufficient funds for Interior to accomplish the Congressional intent of the Endangered Species Act of 1973.

Thank You.

AMERICAN ASSOCIATION OF ZOOLOGICAL PARKS AND AQUARIUMS,
Wheeling, W. Va., June 2, 1978.

DIRECTOR,
U.S. Fish and Wildlife Service,
Federal Wildlife Permit Office, Washington, D.C.

DEAR SIR: Please accept these comments on behalf of the American Association of Zoological Parks and Aquariums (AAZPA) on the Advance Notice of Proposed Rulemaking regarding Captive Wildlife Regulation which was published in the Federal Register on 14 April 1978, pages 16144 and 16145.

The AAZPA represents virtually every zoological park, aquarium, wildlife park and oceanarium in the Americas and nearly all of their professional staff members. We also represent animal suppliers, who furnish our institutions with wildlife specimens, and the more than 250,000 zoological and aquarium society members, who offer support to our institutional members. The AAZPA is the largest professional organization representing zoological parks and aquariums in the world.

We are pleased that the U.S. Department of the Interior, Fish and Wildlife Service published an advance notice of a proposed rulemaking dealing with regulations on captive-born wildlife. We find that it is especially gratifying that the Service is apparently recognizing that the existing regulations on the movement of captive-born endangered species in commercial transactions has interfered with the captive propagation of endangered species and that the present strict application of prohibitions on the movement of captive-born endangered species creates obstacles to the effective propagation of such wildlife. We respectfully remind the Service that we have been making statements to that effect in Congressional hearings and regulatory agency meetings since early in 1974. We have always held that it was more than proper that the Service maintain stringent prohibitions upon the taking of endangered species from the wild and that they do all in their power to enhance

the critical habitat upon which endangered species were making their attempts at survival.

Your notice of a proposed rulemaking provided for three alternatives, but it was suggested that the Service did not expect to limit its consideration to the three alternatives described in the notice.

On behalf of the Association, I suggest an alternative which, in essence, is drawn from the three listed alternatives and some additional information that I wish the Service to consider. We feel that the Secretary should reclassify all captive-born endangered species to the status of threatened and that special rules be accorded to such species. The Secretary should provide for a record-keeping system which would cause all persons and institutions wishing to traffic in captive-born endangered species to fill out forms provided by the Service immediately upon the shipping of captive-born endangered species in a commercial transaction. The forms should be noncomplex and require that the shipper list the animal's common and scientific name, supply a notarized statement indicating that the animal was born in captivity and provide the date of birth. The forms should be multi-plied, and one form should accompany the shipment; another should be sent to the Service; and the third form be retained in the files of the shipper. The Secretary may wish to include in the special rules that persons and/or institutions trafficking in captive-born endangered species must be participants in the International Species Inventory System (ISIS). If the provision for ISIS is included, a fourth portion of the multi-plied form could be added. The Secretary should also provide in the special rules that all persons and/or institutions participating in the movement of captive-born endangered species should file a detailed annual report listing all transactions in such wildlife.

It is important to point out that the Service could quite easily monitor the movement of captive-born endangered species if the above-described program were initiated. During such monitoring, the Service would have sufficient information available to determine if the program was enhancing the provisions of the Endangered Species Act. The existing regulations promulgated by the Service with reference to the taking of endangered species from the wild should remain intact.

I respectfully draw your attention to the report from the Senate Committee on Environment and Public Works, which was the result of activity within the Committee on 24 April 1978. I am quoting directly from the above-described Senate Committee report under the section captioned "Scientific and Museum Specimens": "In oversight hearings concerning the Endangered Species Act, the Committee also received testimony from organizations representing zoos. These witnesses were skeptical of the necessity for the stringent and burdensome process developed by the Fish and Wildlife Service for regulation of their captive-bred endangered and threatened species. The Committee advises the Service to reexamine these regulations and the rationale upon which they are based in light of this testimony, and to make every effort to insure that only those regulations which result in real benefits for wild populations of endangered and threatened species are retained. In any event, every effort should be made by the Service to reduce the amount of paperwork and time involved in this regulatory process."

The above-described regulatory scheme promulgated by the Service would greatly alleviate existing problems zoological parks, aquariums and individuals are having with the Service's extant regulations on the movement of captive-born endangered species. It would also be in keeping with the comments from the Senate Committee on Environment and Public Works. There is also little doubt that the above-suggested regulatory scheme would accord the Service with sufficient evidence to continue their protection of endangered species and would accord their staff members with more time to sufficiently address the growing needs of protection of endangered species in the wild and addressing the critical needs of protection of dwindling habitats upon which these endangered species exist.

We are looking forward to an actual publication of a proposed rulemaking, at which time we will submit more detailed comments. Again, we are very pleased that the Service is recognizing the needs of zoological parks, aquariums and individuals who are entrusted with captive propagation of endangered and threatened wildlife.

Most sincerely,

ROBERT O. WAGNER,
Executive Director.

**STATEMENT OF ROBERT O. WAGNER, EXECUTIVE DIRECTOR,
AMERICAN ASSOCIATION OF ZOOLOGICAL PARKS AND
AQUARIUMS, AND GEORGE STEELE, ESQ., ZOOLOGICAL
ACTION COMMITTEE, INC.**

Mr. WAGNER. Thank you, Mr. Chairman. Mr. Chairman, My name is Robert Wagner. I am the executive director of the American Association of Zoological Parks and Aquariums.

I certainly thank you and members of this committee for the opportunity accorded us in providing testimony for this oversight hearing dealing with the vitally important Endangered Species Act of 1973.

The AAZPA represents virtually every zoological park, aquarium, wildlife park, and oceanarium in the Americans and nearly all of their professional staff members. We also represent animal suppliers, who furnish our institutions with wildlife specimens, and the more than 250,000 zoological and aquarium society members, who offer support to our institutions. The AAZPA is thus the largest professional organization representing zoological parks and aquariums in the world.

Mr. Chairman, we have appeared before this and other committees in the past providing testimony referencing the association's opinion on the regulations promulgated by the U.S. Department of Interior regarding the Endangered Species Act of 1973.

We have also held and continue to hold that we are totally supportive of the promulgated regulations regarding the taking of endangered species from the wild. We have also been most supportive of Interior's efforts at protecting the rapidly diminishing habitat on which this world's fauna is making its stand at survival.

In fact, we have urged that Congress consider increasing funding necessary for the Department of Interior to carry out the intent of Congress in these above-described areas.

Since early in 1974, members of the profession and I have repeatedly requested relief from the Department of the Interior regarding their very stringent regulations promulgated for the movement of endangered species which are born in captivity.

We have stressed that these regulations are counterproductive to the intent of the act and have provided suggestions for ways in which the intent of the act could be fulfilled without the burdensome and restrictive requirements on the movement of captive-born wildlife.

We are very pleased, Mr. Chairman, with the recent activity on the part of the USDI in their publication in the Federal Register of an advance notice of a proposed rulemaking which specifically comes to grips with their regulations on this captive-born wildlife.

The Department of Interior states in this advance notice that the existing regulations on the movement of captive-born endangered species in commercial transactions have interfered with the captive propagation of endangered species and that their present strict application of prohibitions on the movement of such wildlife may be creating obstacles to the effective propagation of such wildlife.

We have officially responded to the Department of Interior on the advance notice of a proposed rulemaking, and I am attaching a copy of our response to his statement for the record.

There were many individuals within our profession who responded in the same general manner and that is to the effect that the Department of the Interior should continue to very stringently regulate any attempts by anyone at removing endangered species from the wild and should dramatically increase their staff time at defining and protecting dwindling wild habitats.

The Department of the Interior has, Mr. Chairman, accorded individuals or institutions holding endangered species in captivity some minor relief via their promulgation of rules which were captioned "Captive Self-Sustaining Populations."

While the association applauds these earlier efforts, we have stated to the Department, and reiterate to this committee, that the CSSP regulatory scheme simply is not working, nor is it addressing the needs of animals in captivity.

Moreover, few zoological parks and aquariums have applied for a permit under the CSSP regulation because the Department of Interior has determined to date that only 11 species of wildlife qualify for CSSP.

We informed this committee during the last oversight hearings approximately a year ago that Interior's track record with reference to CSSP designations indicated that it would take them beyond the year 2000 to properly designate all qualifying candidates for CSSP.

Mr. Chairman, the report recently published by the Senate Committee on Environment and Public Works specifically requests the Department of the Interior to meet the needs of zoological parks.

The report did so in the following manner, and I quote:

In oversight hearings concerning the Endangered Species Act, the committee also received testimony from organizations representing zoos.

These witnesses were skeptical of the necessity for the stringent and burdensome process developed by the Fish and Wildlife Service for regulations of their captive-bred endangered and threatened species.

The Committee advises the Service to reexamine these regulations and the rationale upon which they are based in light of this testimony, and to make every effort to insure that only those regulations which result in real benefits for wild populations of endangered and threatened species are retained.

In any event, every effort should be made by the Service to reduce the amount of paperwork and time involved in this regulatory process.

It is essential, Mr. Chairman, that we point out to this committee that the association continues to believe that the Department of the Interior can accord necessary relief in the regulatory process, thus obviating any need for an amendment to the Endangered Species Act.

We wish to reiterate that we have not requested an amendment according our members relief to transact their necessary business in the movement of captive-born wildlife.

Mr. LEGGETT. Mr. Wagner, I have read the balance of your statement. You support no amendments to the bill.

Mr. WAGNER. That is correct.

Mr. LEGGETT. You think that section 7 is working fine. You point up the drama of the *Tellico* case, but we hope that that is an isolated case.

Mr. WAGNER. Yes, sir.

Mr. LEGGETT. Very good.

George, do you have a statement?

Mr. STEELE. Mr. Chairman, I have a statement that I would like included in the record, which has been submitted.

Mr. LEGGETT. Any your June 2 statement will be included also, Mr. Wagner.

Mr. WAGNER. Thank you.

Mr. STEELE. I totally support Mr. Wagner's statement, and we are in total agreement with everything that he has said. As you know, the Zoological Action Committee is the public political action arm of the zoological profession, and we are doing everything we can to support the position of no amendments to the act, specifically 2899, and again, we hope, as Bob has said, that Interior will in their wisdom adopt a new regulatory regime akin to alternative 2 in their proposed rulemaking, which will help us over this problem that we are having with the present burdensome regulatory regime and encourage rather than discourage the captive breeding of endangered species.

Mr. LEGGETT. How about NOAA, now. Do they have jurisdiction over endangered species that you deal with, also?

Mr. WAGNER. Certainly.

Mr. LEGGETT. And are they more cooperative in the captive species cooperative program?

Mr. STEELE. Well, they have, relatively speaking, Mr. Chairman, very few species under their domain, and their regulatory process is considerably shortened over that of the Department of Interior. And we have not had the delay experience with NOAA that we have had with Interior. I think it would be safe to say, however, that by comparison, the number of endangered species applications which the Department of Commerce receives is minuscule, compared to that of the Department of Interior.

Mr. LEGGETT. The subcommittee remains available to assist you in some of your administrative machinations, to the extent that we can. Certainly, we have sought adequacy in the budgets of the Departments, and sometimes only with modest success.

We do want, however, the redtape to be minimized to the maximum extent feasible.

Mr. STEELE. Mr. Chairman, I know that Mr. Wagner shares our belief that budgetary consideration be given to increasing the manpower and other resources necessary for greater implementation of the protection of critical habitat of endangered species. While the act addresses itself to the need in this area, up to now, there has in our judgment been gross neglect in developing and implementing that program.

And one of the reasons that we would like to see a simplification of the regulatory process is that hopefully, some of the manpower which we believe is being wasted now by the Department of Interior in this redtape regime that you were speaking of could go to what we perceive to be more critical needs of this act—namely, protecting the taking from the wild and helping in the preservation and acquisition of more critical habitat.

Mr. WAGNER. Mr. Chairman, a review of the Federal Register, wherein applications for endangered species are obviously published, we have found since December 28, 1973, approximately 75 percent of the applications that are published therein are for cap-

tive born, the movement of captive-born wildlife in reference to the taking of animals from the wild.

So three-fourths approximately of the review time and the work on the part of the endangered species staff and that of the Federal Wildlife Permit Office must be going for the review of captive-born wildlife, as opposed to the taking of animals from the wild.

Mr. LEGGETT. Counsel, do you have any questions?

Mr. THORNTON. Yes, Mr. Chairman.

Mr. Wagner, I take it you are opposed to the raptor provision in the Senate bill?

Mr. WAGNER. Primarily two things, sir. One is that it is included in section 7, amendment 2899, rather than addressing a separate amendment to section 9. The amendment addresses both section 7 provisions and section 9, and therefore, because it is included in that specific amendment, yes, sir, we are opposed.

Mr. THORNTON. Now, if it was just a section 9 amendment, a separate amendment for section 9, you would still oppose the raptor provision because it is too limited, isn't that correct?

Mr. WAGNER. That is correct. If it was an amendment to accord free movement for all forms of captive-born wildlife, we would have to take a very serious look at it. But because it is now in its present form, as you well know, included as an intrinsic part of amendment 2899, we are adamantly opposed.

Mr. THORNTON. George, just to clarify one point. In your submitted testimony, I see that you propose an amendment on the Senate side for captive-born wildlife, but you are not making that proposal here.

Mr. STEELE. We did not propose—

Mr. THORNTON. Well, page 3, it says:

During our testimony before the Senate Committee . . . we suggested a proposal that endangered species born in captivity . . . be listed in a separate category as "threatened species."

Are you suggesting a regulatory approach—

Mr. STEELE. We were addressing the regulatory approach, and we were making comments at that time on the proposed rulemaking of the Department, but not an amendment to the act.

Mr. THORNTON. No further questions, Mr. Chairman.

Mr. LEGGETT. Barbara, any questions?

Ms. WYMAN. No, Mr. Chairman.

Mr. LEGGETT. Gentlemen, thank you very much. It has been very helpful.

Mr. LEGGETT. Our final witness today is Mr. Jack Gehringer, the Acting Deputy Assistant Administrator for Fisheries, NOAA. Jack, it is very nice to have you here.

STATEMENT OF JACK W. GEHRINGER, ACTING DEPUTY ASSISTANT ADMINISTRATOR FOR FISHERIES, NOAA; ACCOMPANIED BY ROBERT GORRELL, MARINE MAMMALS AND ENDANGERED SPECIES PROGRAM, AND ERIC ERDHEIM, OFFICE OF GENERAL COUNSEL, NOAA

Mr. GEHRINGER. Thank you, Mr. Chairman.

My name is Jack W. Gehringer, Acting Deputy Assistant Administrator for Fisheries of NOAA. I have with me today on my right Mr. Robert Gorrell, of our marine mammals and endangered spe-

cies Program and on my left, Eric Erdheim, of the Office of General Counsel of NOAA.

We have submitted testimony, which I would like——

Mr. LEGGETT. Your statement will be included in the record as though read.

[The following was received for the record.]

STATEMENT OF JACK W. GEHRINGER, ACTING DEPUTY ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Mr. Chairman and Members of the Subcommittee, I am pleased to be here today to discuss our agency's progress in implementing the Endangered Species Act of 1973.

My testimony discusses basic responsibilities of the Department of Commerce under the Act, our major accomplishments and expenditures to date, planned activities, and interagency consultation. Lastly, it comments on proposed amendments concerning section 7 of the Act.

The responsibilities of the Department of Commerce under this Act have been delegated to the National Marine Fisheries Service (NMFS). Our basic responsibility is to develop and maintain conservation programs for fish, aquatic wildlife, and plant species of the marine environment. In meeting these responsibilities we have, of course, worked very closely with the U.S. Fish and Wildlife Service (FWS) of the Department of the Interior. We have also interacted with the States, other Federal agencies, and, in certain situations, foreign countries. Our actions have involved administration, research, and law enforcement functions.

Our actions on the State level have involved establishing the mechanism for State/Federal Cooperative Agreements under section 6, cooperative law enforcement efforts, and consultations relative to the possible listing of resident species.

On the Federal level, we have entered into interagency memoranda of understanding with the FWS to provide for cross-utilization of enforcement authority and capability, and to clarify jurisdictional responsibilities and listing procedures. We have also co-chaired Committees with the FWS to brief other Federal agencies on section 7 of the Act, to develop guidelines for Federal agency consultation under it, and to seek the assistance of other Federal land and water management agencies in identifying critical habitats of native endangered and threatened species. We have also interacted with the Customs Service of the Treasury Department in import-export enforcement activities. To a lesser degree, we have worked with the State Department, Agriculture Department, and the Environmental Protection Agency.

International cooperation has involved assisting in the implementation of the Endangered Species Convention, explaining U.S. laws and conservation programs for endangered marine species, and soliciting views and information from foreign countries concerning the possible listing of species.

We have also encouraged research on endangered whales and attempted to persuade foreign countries, through the International Whaling Commission (IWC), to adopt a 10-year moratorium on the commercial harvesting of all large whales. Significant reductions in fin, sei, and sperm whale quotas have been achieved. Management of the bowhead whale has been established under a quota for subsistence take by the Eskimos of Alaska, and involves an augmented research program to assess the current population and the impact of Eskimo take.

We participated in the first Conference of Parties to the Endangered Species Convention in November 1976 where the United States was successful in getting three marine species listed on the appendices to the Convention (fin and sei whales, and the totoabe, a Mexican weakfish). We also helped prepare documents for the October 1977 working session of the Convention parties. The next Conference of Parties will be held in February 1979 in Costa Rica. Among other things, we are reviewing the biological and trade status of Convention marine species native in the United States for possible change in listing on the Convention's appendices. In addition to preparation for meetings of Convention parties, we also provide continuing assistance to Interior in the implementation of the Endangered Species Convention, both as a member of the Scientific Authority and as a consultant to the Management Authority.

Other program actions and accomplishments include publication of final regulations covering general administration of the Act, civil procedures, seizure and forfeiture procedures, permit provisions, and cooperation with the States under

section 6. Among other actions, we finalized regulations, jointly with the FWS, formalizing procedures for interagency consultation under section 7 of the Act.

Under our permit regulations, we have processed 38 permit applications for scientific purposes involving the endangered shortnose sturgeon, endangered sea turtles, and one or more of the eight endangered species of large whales; 33 permits have been issued by NMFS.

Our research has included stock assessments, population dynamics, habitat requirements, and other factors necessary to monitor the biological status of species, support listings, and encourage foreign governments to adopt complementary conservation measures.

Recent NMFS reports on the endangered bowhead whale concern population biology of the whale in the Bering, Chukchi, and Beaufort Seas; the 1977 catch of bowhead whales by Alaskan Eskimos, with a review of the fishery, 1973-1977; and biological summary of the species. As indicated earlier, we are expanding research on bowheads.

On sea turtles, we are conducting population, research, and habitat surveys in the southeastern United States. In addition, we are developing a sea turtle conservation trawl to reduce the incidental catch of sea turtles during shrimp fishing.

We reported on development of Hawaiian monk seal habitat requirements last year and we are presently preparing a proposed designation of critical habitat for this species.

We established a recovery team for shortnose sturgeon which hosted a national meeting of sturgeon experts and interested individuals last August to discuss current research and information needs. The team members (non-government sturgeon researchers) exchange data, review technical reports, identify research and management needs to restore shortnose sturgeon, and contract sturgeon research.

We have expended an estimated 16 man-years of effort in reviewing information on Atlantic bluefin tuna, Hawaiian monk seal, Caribbean monk seal, totoaba, green, loggerhead, and Pacific ridley sea turtles for possible listing under the Act. The Atlantic bluefin tuna was not listed due to adequate regulation under the Atlantic Tunas Convention Act. The Hawaiian monk seal was listed as endangered in November 1976. Final regulations listing the Caribbean monk seal and totoaba as endangered are expected to be published in the near future.

After signing a new Memorandum of Understanding with FWS to clarify responsibility for sea turtles, we drafted final regulations to list green, loggerhead, and Pacific ridley sea turtles as threatened species. Our agency also has drafted a final environmental impact statement on the listing. Under threat of lawsuit, NMFS and FWS recently reopened the public comment period on the sea turtle proposal for 21 days to receive new scientific and commercial data. The comment period closed on April 17, 1978. Final regulations are expected to be published by the Department of Commerce and the Department of the Interior this summer after analysis of the new information and decision-making process are complete.

In the area of endangered species enforcement, we have made significant accomplishments. Even though our enforcement effort is largely restricted to specific complaints, through December 1977, NMFS Special agents have investigated 1,474 cases involving alleged violations of the Act. The majority of these cases involves unlawful importation of and interstate commerce in parts and products of endangered species, particularly whale teeth, bone, and oil, and turtle meat and shells. A total of 4,336 items (which does not include 1,200 metric tons of sperm whale oil) valued at approximately \$319,575 has been seized and subsequently forfeited to the government, and \$84,015 in civil penalties have been paid for violations of the Act.

Of the 1,474 investigations conducted under the Act, 31 were initiated in calendar year 1974, 294 in 1975, 633 in 1976, and 513 in 1977. The number of investigations initiated in 1977 was slightly below the 1976 total. This may have been due, at least in part, to an increased public awareness of the Act created by dissemination of pamphlets, posters, fact sheets, and copies of the Act and regulations, and by personal contacts between NMFS special agents with individuals involved in commercial activities dealing with endangered species parts and products. This increased public awareness may have reduced the number of violations by persons who would otherwise be unaware of the Act.

Amendments to the Act (Public Law 94-359) authorized the NMFS on July 12, 1976, to grant exemptions from certain interstate and foreign commerce prohibitions to individuals legally holding inventories of certain pre-Act endangered species parts and products. Through January 1978, we issued 57 Certificates of Exemption to persons holding inventories of whale teeth, bone, and oil. One application is pending resolution of a prior enforcement action concerning the applicant. After August 17, 1977, applications for Certificates of Exemption under P.L. 94-359, were

no longer accepted by NMFS. The NMFS registered inventories of pre-Act Endangered Species parts as follows:

WhaleOil/Spermaceti:

27,554,946 lbs.	78,400 lbs.
1,298,069 product units	390,254 pcs.

Scrimshaw

In terms of funding, the National Oceanic and Atmospheric Administration received its first endangered species appropriation in fiscal year 1976. We used the \$400,000 which was appropriated as follows:

\$100,000 to develop policy and regulations, review permit applications, and administration of the program generally; \$150,000 to enforce the provisions of the Act; and the remaining \$150,000 for studying population status and trends of sea turtles, Hawaiian monk seal, Guadalupe fur seal, and northern elephant seal.

In fiscal year 1977, \$541,000 was appropriated. The administration, enforcement and research allocations remained relatively unchanged from fiscal year 1976, and research emphasis shifted to sea turtles. In order to accelerate development of gear designed to reduce incidental catch of turtles by commercial fishermen, in fiscal year 1977 we reprogrammed \$163,000 from other activities into sea turtle research. These monies primarily came from salary lapses within the agency.

In fiscal year 1978, \$1,548,000 was appropriated. Most of the increase in appropriations was for expanded whale research. This year's funding is allocated as follows: program administration \$38,000; enforcement \$160,000; sea turtle research \$250,000; cetacean research \$1,039,000; seal research \$50,000; and shortnose sturgeon recovery team \$11,000. Most research is performed on a contract basis.

Major activities to be carried out in future years will, of course, be keyed to available funding. The Administration's fiscal year 1979 budget request asks to increase our endangered species budget by \$680,000. This increase would be used to expand sea turtle research and to fund State projects under State/Federal Cooperative Agreements.

An increase of \$380,000 would be used to implement fully the gear research program on sea turtles and conduct expanded sea turtle biological research consisting of stock assessments, mechanical tagging studies for migration and population estimates, and coordination with local conservationists on nest relocation programs.

An increase of \$300,000 would be used to establish or augment State endangered species conservation programs in lieu of continued increases of Federal programs. Of the \$300,000, \$255,000 is for grants and \$45,000 is for one position and related administrative costs to administer the cooperative State/Federal agreements and grants.

In addition to expanding sea turtle research and initiating State/Federal Cooperative Agreements with funding, we will continue to do the following with our fiscal year 1979 base appropriations of \$1,583,000; promulgate regulations; conduct law enforcement activities; conduct whale research; carry out sea turtle research and management programs; designate critical habitat as appropriate for sea turtles and the Hawaiian monk seal; process permits; review State/Federal Cooperative Agreement applications; and review Federal agency projects to ensure that they do not jeopardize endangered or threatened species or destroy or modify critical habitats.

Actions which we are considering undertaking over the next several years include: research on all species listed; status reviews and protection resulting from listing Convention species not presently listed domestically as endangered or threatened; status reviews of species for which we receive petitions which present substantial evidence in support of listing; commercial fishing gear research to reduce or eliminate incidental catch of endangered or threatened species; marine flora research and regulations; designation of critical habitat areas; and adequate State/Federal Cooperative Agreement support.

The Subcommittee has expressed particular interest in Section 7 of the Act. Our involvement under this provision of law is small by comparison with that of FWS, due primarily to the number of listed marine species (we are responsible for 14 species presently listed and FWS is responsible for over 600), and that most Federal actions affect land or freshwater areas. We have not designated any critical habitat. Prior to NMFS and FWS publishing Section 7 final regulations on January 4, 1978, most consultations were initiated through the NEPA process and informal Section 7 guidelines published by NMFS and FWS.

Most consultations have involved: the Army Corps of Engineers concerning maintenance dredging, beach nourishment, or power projects; the Environmental Protection Agency concerning power plants, sewage treatment, and tidal projections; and, more recently, the Bureau of Land Management in oil and gas lease/sales in the Outer Continental Shelf. We have also reviewed coastal zone management plans of

the NOAA Office of Coastal Zone Management for potential impact on listed species. We believe that most Federal agencies with whom we have consulted accept our biological opinion or recommendations, which may simply alert them to the presence of endangered species in the area to be affected. As a result of consulting with NMFS, the Federal agency involved has taken action to safeguard against jeopardy and refrained from conducting the activity during certain periods of time (e.g., not dredging during the months of high species occurrence). We are not aware of any unresolvable conflicts involving species under our jurisdiction.

With respect to various proposals to amend Section 7 of the Act to provide exemptions for certain Federal projects or to establish an interagency committee to decide on exceptions in the case of "unresolvable conflicts," NMFS believes that Section 7 presently offers sufficient latitude through the consultation process to remedy problems which may arise. Consultation properly utilized should preserve the interest of the species in question and allow a viable alternative for the initiating Federal agency. Furthermore, we believe that amendment of Section 7 to allow exceptions to the jeopardy or critical habitat tests may seriously dilute protection now afforded by the Act to species endangered and threatened with extinction. Accordingly, we do not believe amendment of Section 7 of the Act is appropriate.

Mr. Chairman, this concludes my prepared statement. I will be pleased to answer any questions you may have.

Mr. GEHRINGER. Rather than taking your time with summarizing, as I had earlier intended, I would like to open up for particular questions you might have.

Mr. LEGGETT. Well, why don't you summarize it; I can speed read it while you are summarizing.

Let me ask you this. You say, "We have also cochaired committees with FWS to brief other Federal agencies on section 7," et cetera. You are not for any amendment to section 7, I presume?

Mr. GEHRINGER. That is correct.

Mr. LEGGETT. It would be premature to look at any amendments at this point?

Mr. GEHRINGER. Yes, sir.

Mr. LEGGETT. Now, have you run into any situation where you thought it was wise to go through an EIS procedure in designation of critical habitat?

Mr. GEHRINGER. We have not proposed it, but for the Hawaiian monk seal, we are considering that at the present time.

Mr. LEGGETT. That is an open option for you, right?

Mr. GEHRINGER. Yes. It presently exists under the legislation.

Mr. LEGGETT. How about the Hawaiian monk seal?

Mr. GEHRINGER. Yes, sir.

Mr. LEGGETT. What critical habitat are you considering designating for that?

Mr. GEHRINGER. This is an action with the Department of the Interior, of course, and part of the habitat includes the land which they control. Mr. Gorrell will elaborate.

Mr. GORRELL. We have been looking at beaches that are used by the seals for breeding purposes and pupping. We are also looking at adjacent shallow waters that are important to the pups for thermal regulation and feeding.

Most of the range of the Hawaiian monk seal is found within the Hawaiian Islands National Wildlife Refuge, which spans some 900 miles, and we are looking at those stretches of beach and adjacent waters utilized for breeding and pupping by the Hawaiian monk seal.

Mr. LEGGETT. Apparently, you have a problem determining exactly where the critical habitat is located; is that right?

Mr. GORRELL. We have done research on it in the past. We are continuing research on it this year.

Mr. LEGGETT. As I see the list here, apparently the California freshwater shrimp is listed as endangered. Presumably, your agency would not know anything about that?

Mr. GEHRINGER. That is correct. There are only 14 species of marine animals for which we are responsible that are currently on this list.

Mr. LEGGETT. And those are generally described as what?

Mr. GEHRINGER. Eight species of whales, the blue, bowhead, grey, humpback, right, fin, sei and sperm; two seals, the Hawaiian monk seal that I mentioned earlier, and the Mediterranean monk seal; three turtles, the hawksbill, leatherback, and Atlantic Ridley; and one fish, the shortnose sturgeon. That is the limit of our listing at the present time.

Mr. LEGGETT. The shortnose sturgeon, is that a freshwater or saltwater species?

Mr. GEHRINGER. The sturgeon is considered a saltwater species. Although it does spend some time in brackish and fresh waters, it spends the majority of its time in marine waters.

Other species, of course, have been proposed for listing: Three turtles, for which you have heard various degrees of progress reported in the last couple of years; the Caribbean monk seal and the totoaba, which is a Mexican weakfish. Several others are under consideration but are not that far along.

Mr. LEGGETT. Now, in the current fiscal year, you are spending \$1.584 million on endangered species?

Mr. GEHRINGER. \$1.584 million.

Mr. LEGGETT. Now, is that an administration of the endangered species functions, or in just research?

Mr. GEHRINGER. This includes all our activities under the Endangered Species Act.

Mr. LEGGETT. How many species over which you have jurisdiction are pending for listing?

Mr. GEHRINGER. We have proposals for the three turtles I mentioned, the Caribbean monk seal, and the one weakfish.

Mr. LEGGETT. How many have been listed?

Mr. GEHRINGER. The 14 that I mentioned before.

Mr. LEGGETT. Now, as far as designation of critical habitat for the whale you mentioned, how do you do that, or do you?

Mr. GEHRINGER. There is a recommendation for a marine sanctuary for the bowhead whale in the Bering Sea. This is under review at the present time by NOAA's Office of Ocean Management. But as far as I know, we have no formal designation request for any whale critical habitat.

Mr. LEGGETT. Now, are sanctuary and critical habitat the same thing?

Mr. GEHRINGER. No.

Mr. LEGGETT. The sanctuaries are actually some kind of land body; is that right?

Mr. GEHRINGER. Well, the marine sanctuary is a segment of the ocean. Would you care to elaborate on that, Mr. Erdheim?

Mr. ERDHEIM. The difference between the critical habitat and the marine sanctuary program is that for critical habitat, other Feder-

al agencies are required to consult with us to determine whether the action that they propose to fund, authorize, or undertake would result in the destruction or modification of the species' critical habitat or jeopardizes the existence of the species.

The marine sanctuaries program, which is administered by the NOAA Office of Ocean Management, actually regulates the area designated as a sanctuary. I believe that means a Federal permit cannot be issued unless the Secretary of Commerce certifies that the permit is consistent with regulations promulgated to protect the sanctuary. So it is a much stronger regulatory mechanism than critical habitat.

Mr. LEGGETT. How many people do you have working in your department in this area, Jack?

Mr. GEHRINGER. Well, we have 12 positions at the present time with that base of \$1.5 million.

Mr. LEGGETT. And their exclusive job is endangered species?

Mr. GEHRINGER. Yes; with the exception of some enforcement agents. We have, I believe, six agents who are charged to this program, but we have a broader enforcement program. We use all of our agents at one time or another in various investigations, either marine mammals, endangered species or fishery regulations. But only six are assigned to this particular program.

Mr. LEGGETT. Now, you have created no critical habitat?

Mr. GEHRINGER. That is correct.

Mr. LEGGETT. And have you created any marine sanctuaries?

Mr. GEHRINGER. There are several sanctuaries that have been created under the coastal zone management program, but none with respect to the endangered species that we are concerned with here.

Mr. LEGGETT. Now, we had at one point some testimony from some fisherman down in the Gulf complaining about sea turtles and how that is interfering with their shrimpery. What is the fact in that regard, as far as you see it?

Mr. GEHRINGER. There are a number of sea turtles which are taken incidentally to shrimp fishing operation, the magnitude of which we are attempting to determine. We have initiated a large program with respect to this particular gear problem with the turtles.

We are developing an excluder panel for shrimp trawls which we hope will eliminate the bulk of the problem. We are at the present time in the process of designating these three turtles as either endangered or threatened, and our regulations will provide for handling of that situation.

We recognize that it can be a very serious problem. We are working with and getting good cooperation from the industry and from the conservationists, who are also concerned with this.

Mr. LEGGETT. What is the problem with the turtles if they are caught? Can't they just be released?

Mr. GEHRINGER. A number of turtles, if they are caught in a net, can be trapped underwater for a period or time longer than they can sustain life. Some are crushed or partially crushed by the weight of the rest of the catch, the shrimp, fish, et cetera. A number of them can be revived if they are brought to the surface

in time and taken out of the net, and efforts are made to revive them.

Mr. LEGGETT. But you do not have figures on the estimated mortality or anything like that at this point?

Mr. GEHRINGER. We have several contract studies to get a better control of the numbers, but we do not have accurate figures of the magnitude of that at the present time. We do know that in certain times, in certain places, it is a very serious situation.

Mr. LEGGETT. Counsel, any questions?

Mr. THORNTON. Yes, Mr. Chairman.

Jack, it seems to me there is a difference in policy between the two agencies in administering the Endangered Species Act. The Department of Interior is attempting to propose critical habitat at the same time that they are proposing the listing of the species. In contrast, you seem to be in a different posture, waiting for petitions and moving slower on designations of critical habitat. What is the reason for that?

Mr. GEHRINGER. Well, while it may appear we are being passive rather than active, we are considering at the present time and working with Interior on this same issue, designation of several critical habitat areas with respect to a couple of species of turtles.

The jurisdiction of the sea turtle is shared with Interior; insofar as the land portion of their habitat is with Interior, and the sea portion is with us.

Mr. THORNTON. I am not only referring to sea turtles. I am referring to the other species under your jurisdiction, specifically the eight species of great whales.

Mr. GEHRINGER. Mr. Gorrell will try to elaborate on that.

Mr. GORRELL. Pursuant to the President's environmental message of last year, the Fish and Wildlife Service chaired an inter-agency meeting with other Federal land and water management agencies. We presented at that time three lists of priority species for which we were seeking information to help us identify critical habitats. We asked the other Federal land and water management agencies to supply us information and recommendations for listing, depending upon which category it was in. Priority category 1 recommendations and information were due in 12 months. That would be this December.

The bowhead, the grey whale, several other whales, several of the sea turtles, and the shortnose sturgeon were on that first priority category, and there were two other categories. As soon as we have the information available, we will certainly use it in identifying and, as appropriate, designating critical habitat.

In the current whale research that we are conducting, we are looking carefully at the behavior of the animals, occurrences, the importance of a particular habitat to the species—

Mr. THORNTON. I am not sure that you are moving too slow. Maybe Interior is moving too fast, because one of the things that has come out in these hearings is that on several of the problem areas, it has boiled down to a scientific or biological dispute as to whether the species, in fact, qualifies as endangered or threatened, and whether the habitat qualifies as critical.

I am curious, because you are generally taking a different approach. There is certainly more information available on whales—

grey whales, specifically—than there is on some of the species getting listed by the Interior Department, and yet they are moving rather rapidly on theirs and you are not.

Mr. GEHRINGER. If I may offer a possible explanation, although we do have a considerable body of knowledge with respect to the grey whale, the specific requirements to determine a marine areas as critical habitat are great. Most whales are highly migratory and little is known of their specific behavior and habitat requirements. Further, I am reluctant to agree that we have attained a body of knowledge for those marine areas that is possible with a land species. This is not offered as an excuse but as a partial explanation.

We do not have a great deal of manpower for this, and this may be part of the answer to your question.

Mr. THORNTON. If the IWC decides to take grey whales off the protection stock list, are you going to reevaluate your listing of that as an endangered species?

Mr. GEHRINGER. Yes, sir.

Mr. THORNTON. You are going to reevaluate?

Mr. GEHRINGER. If they take it off the IWC list, we will reevaluate our listing.

Mr. THORNTON. Yet you have not done that with the sperm whale?

Mr. GEHRINGER. Yes, sir.

I think one of the reasons we are concerned about the grey whale is its proximity to the United States and our west coast.

Mr. LEGGETT. Now, let me ask you this. Do the Eskimos use bowheads for subsistence purposes.

Mr. GEHRINGER. Yes, sir.

Mr. LEGGETT. Do they use some of these other whales for subsistence, too? The Russians do, I understand that. But the thing is, as far as our 200-mile conservation zone area, the Marine Mammal Protection Act applies in there, so these mammals are protected in that area, whether they are endangered or not, and the Eskimos take only the bowheads. So what difference does it make whether or not we designate these as endangered or not?

Mr. GEHRINGER. Excuse me, sir. I understand that the Eskimos may at times take a grey whale. This is a rare situation, however.

Mr. LEGGETT. Ignoring the rare situations, what difference does it make? Counsel, can you answer that?

Mr. THORNTON. Yes. Well, they are moving forward with the critical habitat determination for the grey whale, and at the same time, it is likely that the IWC scientists are going to determine that the grey whale is no longer deserving of the classification as a protection stock, because the population is up around 12,000 to 15,000 animals.

Mr. LEGGETT. How are we protecting the stock now, outside of IWC? Are we doing anything to protect the stock, other than not taking them?

Mr. THORNTON. The United States has instituted a number of research programs on grey whales. In addition efforts are being made to reduce the harassment of migrating grey whales by tour boats.

Mr. GEHRINGER. Well, if I may, to designate critical habitat, it must be listed under the endangered species provision. And if for the reason that it is no longer endangered this would remove that option of designating a critical habitat for protection.

Mr. LEGGETT. What good does it do to designate critical habitat for a whale? That is what I am really asking.

Mr. GEHRINGER. You can manage the activities of man, whether they are viewing whales; whatever kind of Federal activity is proposed must be consistent with the protection of that habitat for that particular animal.

Mr. LEGGETT. That is very interesting, but you have said exactly nothing. Now, did you want to add to that?

Mr. GEHRINGER. For example, you could regulate oil and gas development in a critical habitat area.

Mr. LEGGETT. Are there any areas that are whale paths that are oil and gas areas?

Mr. GEHRINGER. Yes, along the west coast and off Alaska. We have consulted with the Bureau of Land Management with respect to this particular question.

Mr. LEGGETT. All right.

Mr THORNTON. No further questions.

Mr. LEGGETT. Very good. Barbara, no further questions?

Ms. WYMAN. No questions. LEGGETT. We will adjourn now until 10 tomorrow morning.

Jack, thank you very much.

The meeting will stand adjourned.

[Whereupon, at 2:45 p.m., the subcommittee was adjourned.]

ENDANGERED SPECIES OVERSIGHT

FRIDAY, JUNE 16, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES AND WILDLIFE
CONSERVATION AND THE ENVIRONMENT,
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:30 a.m. in room 1334, Longworth House Office Building, Hon. Robert L. Leggett (chairman of the subcommittee) presiding.

Present: Representatives Leggett, de la Garza, Hughes, Forsythe and Oberstar.

Mr. LEGGETT. The meeting of the Fisheries and Wildlife Conservation and the Environment Subcommittee will please to come to order.

This is the fourth day of oversight on the endangered species legislation, enacted back in 1973. The appropriations authorization for this legislation expires this year and is up for renewal.

The committee has reported an extension of the authorization to the House. That legislation is waiting for action in the Rules Committee.

We heard from the Department of Defense yesterday. Previously we heard from the Department of the Interior and the various interests from the east coast to the west coast affected by this legislation.

Our first witness this morning will be Connie Taylor, representing the Oklahoma chapter of the Sierra Club and the Oklahoma Ornithological Society.

Then we have Dr. Retan from the Alabama Conservancy and the Audubon Society; Dean Hanson from the Tennessee School of Architecture; and Dan Poole from the Wildlife Management Institute.

We also have a panel comprised of representatives of the EDF, Fund for Animals, and Monitor Inc. We plan to finish all of that by close to noontime because we cannot meet this afternoon. After that the subcommittee will cogitate the policy we are going to pursue.

Dr. Taylor, it is very nice to have you before the subcommittee.

STATEMENT OF CONNIE TAYLOR, SIERRA CLUB, OKLAHOMA CHAPTER, OKLAHOMA ORNITHOLOGICAL SOCIETY

Dr. TAYLOR. I am Dr. Taylor, from Oklahoma. I am a botanist and teacher at Southeastern Oklahoma State University.

I have come up here today to represent the Sierra Club and the Oklahoma Ornithological Society.

I have brought prepared testimony with me, but there were some things brought up yesterday concerning plants, and I thought perhaps since I may be the only botanist to testify before the subcommittee, I might address some of these issues.

There has been concern over 1,700 plants being listed, and a lot of people fearing this will stop all progress and growth and activity.

Mr. LEGGETT. Yes. I noticed you nodding and shaking your head yesterday at various times and places. Unfortunately, the record doesn't show any of those expressions.

Dr. TAYLOR. Unfortunately. But I think maybe to give you some illustrations about Oklahoma would give you a good example of how plants might affect what is happening.

The State of Oklahoma is the fourth most diverse in flora of States of the United States, following Hawaii, California, and Texas. We have only 14 plants that are on the threatened or endangered list. Yet, we are one of the most diverse floras in the United States.

Mr. LEGGETT. How many plants do you have in Oklahoma that you have requested to be listed?

Dr. TAYLOR. We had 14 either threatened or endangered that are on the potential list. We have actually removed one, since we have been investigating and working with the endangered species.

Mr. LEGGETT. From where do these 1,700 allegedly come?

Dr. TAYLOR. I think a large percentage of them are in Hawaii, and not quite as large a percent are in California. As I said, Oklahoma is very diverse, and yet we have only a very small number.

Many of those that are endangered species have a unique habitat. Many of these habitats are already in State parks, or in the national forests, being indicated for wilderness status.

We actually have only one location in Oklahoma where there might be a conflict with a project. Of course, this is in the Glover River. We have not only plants, but animals also that are found in this particular river valley.

In this instance, many of these species are in fact rare, threatened or endangered simply because the Army Corps of Engineers has systematically in the last 20 years built dams in the five rivers that come out of the Ouachitans—that particular river valley, the only river valley now that is not dammed.

Mr. LEGGETT. Your statement will appear in the record as though you read it. You can proceed, Doctor, to summarize that any way you want to, and/or respond to the other issues you heard yesterday.

Dr. TAYLOR. OK. I think there can be a lot of misunderstanding of the ecosystem. We have a great many decisions being made by people who know very little about science. Of course, as a scientist I am trying to bridge the gap between the scientist and the politician.

I think many of our endangered species will have a lot of benefits to us that we may not realize at the present time. If 50 years ago we had been able to eradicate penicillin bread mold, which does a lot of economic damage, we would have gotten rid of penicillin.

Yet, if we had done that 50 years ago, we would have foreclosed one of our modern drugs, which has saved millions of people's lives.

So, there has been very little study on the direct actual benefits of various plants and what uses they may have to us. It behooves us in this day and time I think not to eradicate a plant or animal species because of their potential use.

For instance, corn, which is the main sustenance of the diet of a very large percentage of the world today, is no longer known as a wild plant. So, here is an extinct wild plant which fortunately man was able to learn how to cultivate before it became extinct in the wild.

Otherwise, we would not have had all the benefits we derive from this particular species. So, just because a plant is rare or unusual does not necessarily mean that it has no worth economically to man. Because we don't know its economic worth, does not necessarily mean it is not going to be useful.

Mr. LEGGETT. I was surprised yesterday to see that the fresh water shrimp in California were listed as endangered. We are growing forms of fresh water shrimp domestically in at least two dozen places in the West at the present time, apparently quite prolifically.

Whether or not it is exactly the same variety, I don't know.

Dr. TAYLOR. Well, I don't know, either. I think for plants, I know a lot of people yesterday seemed to feel that there was a concern because there was a large number of plants. Yet, I think there is a lot of difference between plants and animals.

Something like a grizzly bear has over 50 or 100 square miles of territory, and you are going to have to have a much larger area to set aside as habitat; whereas, an endangered plant may occupy one-eighth of an acre, and it is going to stay there, it is not going to be wandering off in different places.

So, actually the 1,700, although it is a larger number of organisms, I think the total area that would be affected by plants may actually end up being much less than is going to be involved with our animal protection.

I feel most nonscientists are perhaps not aware of this, and let the numbers of plants kind of act as a panic thing, since it is so much larger than the number of animals.

Mr. LEGGETT. There seems to be some subjectivity associated with endangerment and classification. There may be literally hundreds of sub-species of a fish which may be listed as endangered because it may only appear in one river or tributary.

Still, I think when there was a population of 452 Tule elk in California, the scientists were virtually unanimous in their opinion that this was not an endangered animal, even though there were only 450 in the world, because they knew how to propagate them. Sure enough, they have been built up now to 900 plus, and they are a nuisance in the area where they are currently living.

Dr. TAYLOR. I think there are a lot of different viewpoints among scientists as to what is actually going to be endangered or not.

In Oklahoma and Texas we have a system we are looking at that would actually set up an itemized numerical system, where you can take a species and judge it on its distribution and its numbers and the potential habitat, endangerment and things like that.

So, you would actually come out with a numerical value. It is a system that anybody who knows anything about a species could use. This would kind of reduce from the listing the subjectivity of scientists who may have a favorite orchid or something like that that he wants to save because the orchid specialist in Oklahoma, of course, feels that all Oklahoma orchids are endangered.

So, I think there is developing among the scientific group a system which I am sure will be adopted by the Smithsonian Institution, and the Fish and Wildlife Service, that will attempt to reduce the partiality of scientists for their favorite plant or animal, and will help in making more scientific judgments.

Scientists try to be unemotional, but sometimes we get carried away just like everybody else. My husband and I are responsible for the listing of plants in Oklahoma. We sent the list to the Smithsonian Institution.

Mr. LEGGETT. Do you have a listing in the State?

Dr. TAYLOR. We have a list in Oklahoma of just rare Oklahoma plants that might be abundant elsewhere. Then we have submitted a list to the Smithsonian Institution of things in Oklahoma that we know are of very limited distribution, not only to Oklahoma, but other parts of the United States, also adjacent States.

By the end of this summer I hope we will have a publication out that will list Oklahoma's rarest plants with their habitat and location.

We have tried to be very careful in listing plants that are really not rare, that are not extremely rare. Mainly rare plants are found all together in one location, in unusual type habitats, such as bogs or swamps or things like this.

Of course, in Oklahoma we have the Ouachita Mountain uplift, which is a very old geological formation—

Mr. LEGGETT. On page 2 of your statement you indicate that section 7 of the act prevents the construction of the Lukfata Dam, with a 1.02 to 1 cost benefit ratio.

Dr. TAYLOR. Right.

Mr. LEGGETT. Is that project the subject of any of our bills pending in Congress?

Dr. TAYLOR. Oh, yes. You voted for it probably yesterday, if you voted for the public works bill.

Mr. LEGGETT. The public works bill was not voted on entirely.

Dr. TAYLOR. Well, the Lukfata project is on Carter's hit list.

Mr. LEGGETT. It is on the hit list?

Dr. TAYLOR. Yes, it is.

Mr. LEGGETT. I guess Congress supported this project not quite by 2 to 1 yesterday, if it was one of the hit list.

Dr. TAYLOR. I think almost none of the Congressmen know that to give a 1.02 benefit that the corps has included scenic river benefits downstream from the dam. Without the dam, we in Oklahoma have our scenic river benefits.

I have been very upset that the corps should include this as a benefit when the benefit is already there. That is making a project which is economically unfeasible feasible.

You can laugh, but I think it is really a serious situation. A great deal of misrepresentation is being given to you as Congressmen in

trying to make decisions, that this type of thing should be being done.

That happens to be, I guess, the way the corps is operating, unfortunately. But there are two large dams in the same county. The county down there has 25,000 people. When they had the last hearing down there last year, over 60 percent of the people that attended the hearing were opposed to the project.

I know Mr. Watkins is very much in favor of it, but I believe most constituents in his district are very much opposed to it. It is our last free flowing stream in that area, and we would like to have it preserved. I think we will win even without the Endangered Species Act.

Mr. LEGGETT. Certainly that is a very lean ratio. We have suggested not funding projects less than 1.5 to 1 in the past. The Chair voted against Mr. Edgar. The ranking minority member voted for Mr. Edgar. So, we have some split here.

Your statement and also your analysis, entitled "Endangered Species," will be included in the record. It is very helpful to the subcommittee.

[The information follows:]

STATEMENT OF OKLAHOMA CHAPTER, SIERRA CLUB

The Oklahoma Chapter of the Sierra Club fully supports the Endangered Species Act as it now stands and is opposed to any weakening amendments.

There is an overall lack of understanding and a lot of misunderstanding of man's role in an ecosystem. The increase in endangered species is a symptom of our mismanagement of our environment.

If we could have eradicated bread mold 50 years ago, then we would have done so, and would never have known the benefits of penicillin. Many bacteria and fungi are the main sources of vitamins. These are absorbed from the soil by green plants, and then we obtain our vitamins from the plants. A very intricate and indirect relationship exists which was only recently discovered.

Corn has become extinct as a wild plant. We have no real knowledge yet of the usefulness of most of our wild plant species. Just recently it has been discovered that Pokeweed contains a molluskicide which kills the host snail of the schistosomiasis parasite. The knowledge of our world is still very superficial.

The Endangered Species Act is working. The only real conflict is the Tellico Dam snail darter. Such a conflict should not reoccur because preplanning should avoid such confrontations.

The Federal Government has the capacity to be a major factor in extinction. It owns more than 50 percent of several States. It has agencies with plans to dam, channelize, or alter every stream and river in America—thus its activities must be regulated or controlled if critical habitat of aquatic organisms is to be preserved and if we are to retain the diversity of our streams and rivers.

Presence of a cluster of rare plants and animals indicate a unique habitat, one which would also be unique for man's purposes and one which should have beneficial uses.

The most vocal opponents of the Endangered Species Act are individuals who stand to gain economic benefits from construction of Pork Barrel projects.

If the United States is to curb its inflation, which is fueled by government overexpending, then the act will serve a useful purpose of saving organisms from inadvertant and careless extinction, and at the same time cut pork barrel down to a reasonable level.

STATEMENT OF OKLAHOMA ORNITHOLOGICAL SOCIETY

On May 12, 1978, at our annual spring field trip meeting, the members of the Oklahoma Ornithological Society voted to fully support the Endangered Species Act as it presently exists.

The Endangered Species Committee of the Oklahoma Academy of Science plus interested members voted at their spring meeting to also support the Endangered Species Act and to oppose weakening amendments.

In Oklahoma section 7 of the act prevents construction of Lukfata Dam on the Glover River, the last of an original six free-flowing streams draining the south flanks of the Ouachita Mountains. The benefit-cost ratio of 1.02 is questioned by many scientists and economists.

The river and its threatened species have, in fact, been made rare by the U.S. Army Corps of Engineers construction of five dams in southeastern Oklahoma and southwestern Arkansas.

Man creates rare and beautiful works of art, then places them under guard in a museum. Many of nature's rare species are by far not only older but more beautiful.

God created the world, each individual species. The purpose of each unique organism may be obscure to us, but it is an integral part of the complex web of nature. The value of many rare species is not known. On the other hand, many species have become extinct or near extinction because they are extremely valuable to man. The whales are an example of this. Many birds are becoming extremely rare because of excessive use of pesticides, most of which also are dangerous to humans. These have served as an early warning system to help us keep from poisoning ourselves.

Over 5,000 contacts have been made to the endangered species office to determine if construction projects or other Federal activity will endanger critical habitat. The uniformly successful outcome of these inquiries indicates that the act is working as Congress intended to prevent the Federal Government from causing extinction of rare species and a decline in our Natural Heritage.

THOSE ENDANGERED SPECIES

(By Drs. R. John Taylor and Constance E. Taylor)

Recently there has been much newspaper space, TV and radio time devoted to the Forbisher Louisewort and to the snail and leopard darters, as well as a number of other forms of life equally insignificant to most of us. Why all the sudden interest in living things most people didn't know existed?

In 1966 Congress passed the Endangered Species Act. Various aspects of the law included identification of all rare, threatened, or endangered animal species, and restricted or eliminated importation or trade in endangered species.

In 1973 it was further expanded to include plants, and gave the Endangered Species Office in the Department of Interior the authority to determine critical habitats of these species.

A final aspect of the law stated all other Federal departments and agencies should take such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of endangered and threatened species, or result in the destruction or modification of their habitat.

Over 150 Federal activities have been satisfactorily altered or modified to insure survival of rare plants and animals. Only a few, such as the snail darter and Tellico Dam, seem incompatible.

If all forms of life lived as separate individuals that had no influence on each other or on other species, then these laws and the extraordinary efforts presently being mustered would probably not be necessary. But this isn't the case.

IT'S AN ECOSYSTEM

All of the kinds of life in a given area live as part of an interacting system called an ecosystem or biotic community. The smallest, seemingly most insignificant species in these systems have an influence on all other forms of life in the system and is in turn influenced by all other species.

Communities that live next to each other influence one another. Eventually a change in a living system in one part of the world will be felt by others throughout the world. One example of this fundamental fact is the cattle egret, an essentially white bird about the size of a crow with long legs.

Until a few years ago, the cattle egret lived in Africa. Changes in land use practices there favored this bird so its numbers increased rapidly. Soon it showed up in South America. Now the bird is found throughout most of the warmer parts of the southeastern United States.

Perhaps one good way to think of a living system is as a woven cloth with threads crossing in every direction. Each thread adds some strength to the cloth. Pull out a

thread and part of the strength is gone. If enough threads are ripped away, the cloth collapses.

The analogy of the woven cloth may be carried one step further. Just as a cloth that has been torn or frayed is more susceptible to destruction, a living community with a number of its component species removed is more apt to be affected catastrophically by any change than is a community with all of its members. Since man is one of the members of most ecosystems, then it becomes increasingly more important to maintain as many living systems as possible.

One of the main problems is a general lack of knowledge of how living things are influenced by one another. In light of our accomplishments in the physical sciences during the last 50 years, we are apt to be blasé about the state of our knowledge. But the plain truth is that although some of this knowledge is known by a few specialists, for most species it is lacking or at best superficial. Certainly we were not given the capacity to understand ourselves and other forms of life to have this life exterminated before we can benefit from that knowledge.

Where would mankind be today if the weedy wild ancestors of modern day wheat, corn, rice, sugarcane, and potatoes had been exterminated before their bounty had been given up to man? Perhaps the wild ancestors of the horse, cow, hog, sheep, and chicken have made an equally important contribution to our civilization.

WHY SPECIES DECLINE

The fact is, the wild ancestors of some of these forms of life are now extinct. Others are on the very edge of oblivion. It would be a sad comment on man if long ago he had completely eliminated the gray-green fuzzy glob that grows on bread, jellies, and other food. Think of the suffering that has been eliminated by penicillin, which is driven from this mold.

We think there is no question that many species around today could be of great value to man if more was known about them. At the same time other species recently exterminated have carried with them into extinction valuable aids to man—lost forever.

Often when we examine how and why many species have declined to the point of being rare or endangered, we find it is directly due to the economic value of the species itself. Evidently a large portion of individuals engaged in utilizing renewable natural resources never had read to them the fairy tale about the "Goose That Laid the Golden Eggs."

The abundance of the Passenger Pigeon and Carolina Parakeet were so great that it seems incomprehensible that in a short time their populations could rapidly drop and the birds become extinct. Ladies' hats were the near demise of the Roseate spoonbill, alligator shoes and seal skin coats almost wiped out these species. Protection has allowed these populations to partially recover.

We never seem to learn the lessons of history for today whales are being overexploited. Total lack of regulation resulted in the peak catch of the Pacific Sardines falling from a high of over 750,000 tons in 1936 to a total 30 tons in 1953. Atlantic Herring catches are following the same pattern. Fortunately, both state and national laws and more biological information are being used to protect the breeding populations of such valuable natural resources.

MAN'S USES ARE LIMITED

There are approximately 800,000 plant species, but man's utilization of these diverse plant materials is extremely limited. Corn, wheat, and rice constitute our major carbohydrate sources, while only a few other species make up a major portion of the rest of our plant utilization.

Siri van Reis Altschul, in a recent article in *Scientific American*, reported the results of her systematic examination of the 2.5 million plant specimen collection in the New York Botanical Gardens Herbarium. Label information indicated 1,225 species were edible, 922 aromatic, 407 medicinal, 284 poisonous, 241 could be taken for gastrointestinal disorders, 190 had analgesic properties, and 116 were suitable for treating injuries.

Many others were useful in preparation of beverages, teas, tonics, and other valuable concoctions. Modern intensive land utilization is spreading, eliminating or restricting habitat of many of these potentially useful species.

Most of us forget that up until a relatively short time ago, 150 to 200 years, most men lived in intimate association with nature. This association has been important to man as a species. His nature is at least in part the result of this association. It is no mystery then that when man's spirit needs to be bolstered, he most often returns to nature. If the present trends in urbanization continue, natural areas where man

can recreate and relax will become increasingly important. Like his diet, these recreational experiences need to be varied to be most helpful.

It is hard for most of us to get excited about the loss of a small three inch fish or some similar species. The fact often overlooked is that the fish has been able to persist in an area because of the uniqueness of that habitat. Often when a thorough study is made, it is found that not one, but several rare animals as well as plants are living there.

Preservation of such an area may provide various dividends to man from now on. In most cases it is very hard for man to give up what appears to be definite immediate gains for indefinite long term gains. Modification of much of the world's natural areas to suit man's constantly changing whims is the main threat to all other species and eventually man himself.

Why then must man be mindful of endangered species? If for no other reason, concern for his own welfare. As more and more species become extinct, eventually man will become the endangered species. Some argue that man cannot afford to save endangered species, but we ask can man afford not to?

EDITOR'S NOTE: The Taylors are on the faculty of Southeastern Oklahoma State University, Durant.

Dr. TAYLOR. Thank you for allowing me to testify this morning.

Mr. FORSYTHE. Dr. Taylor, you mentioned a system that you had devised in which you were going to do this numerically. Is that in a form that you could supply the committee?

Dr. TAYLOR. Yes, I can send you copies. It comes from—I am not sure where it originated—the Texas Endangered Species Committee is reviewing it. I have introduced it and sent it to members of the Endangered Species Committee of the Oklahoma Academy of Science.

We are examining it and hope to adopt that system with perhaps changes so that we will have a systematic manner in which to evaluate endangered species.

[The following was submitted:]

MODIFIED SPARROW-WIGHT PROGRAM—EVALUATION OF TAXA FOR ENDANGERED STATUS

Since the Federal List of 1700 species of endangered plants has emphasized those taxa in Texas that have not been studied extensively and are essentially from only 1 or 2 populations, the establishment of criteria upon which to base whether a taxon should be included or excluded from a state list of endangered taxa cannot be founded upon knowledge that does not exist. Therefore, it is recommended that these taxa with an extremely limited distribution (known only from a few populations and endemic to the state) be included in the list of endangered taxa.

In preparing a list of taxa which have a regional distribution with only a few populations within the boundaries of Texas, the philosophy prevails that these also should be considered endangered, at least as far as the state is concerned, as those are critical habitats which are potentially in danger of being eliminated. Thus, it is recommended that those taxa with an extremely limited distribution (known only from a few populations within the state but distributed regionally elsewhere) be included in the list of endangered taxa.

With the acceptance of the inclusion of those taxa that are known only from a few populations within the state of Texas, the chief purpose of this evaluation system is to separate the proposed candidates that may qualify as an endangered taxon with a wider range of distribution. The concept of which taxa should be endowed with endangered status is dominant and excludes a priority rating for funding studies to determine "status". With this concept of endangered, it is recommended that Section IV the species (points total 15) be eliminated from this consideration and placed in a future category entitled "Priorities for Funding of Endangered Plant Taxa of Texas," especially since this has no bearing on whether it should be included on the endangered lists for Texas plants but is important for the priority system.

The following modification of the Sparrow-Wight system for funding priorities is relatively unchanged except for Section II Vulnerability. C & D have been combined to form C. Distribution.

The basis of the evaluation system is an assessment of the imminence of the threat to the species' continued existence. It is not an attempt to replace human judgment, but merely an aid to determine endangered status. The system is largely based on (1) the biology of the plant, and (2) the security of its habitat. Biological considerations center on numeric status, capability of the taxon to respond to actions taken to reduce the threat to extinction, and genetic and evolutionary characteristics of the species. Trends in the amount and suitability of critical habitats are evaluated. There are three main sections of this evaluation system. They deal with the species': (1) population status, (2) vulnerability, and (3) recovery potential. Assignment of values (100 points total) to the sections and their subheadings are subjective evaluation.

The kind of system that can be used is influenced by the available data base. Many species, regardless of their biological characteristics, have simply not been of great interest or value to man, and thus our knowledge about them is sparse. Other species have either been elusive and hard to study, or have yielded data not yet understood. The result is that quite a bit is known about some plants or about certain characteristics of groups of plants, and little or nothing about others. These disparities in the preciseness of information exist throughout the plant kingdom and influence the way in which any evaluation system can be constructed or used. There is no *scientific justification* for designing more sensitivity into the system than is warranted by the quality and quantity of the data.

The use of general statements characterizing biological attributes of plants in different taxonomic groups may assure generally high scores for all plants which possess that attribute.

In general, with this system one can expect species in the most desperate straits to score highest. In addition, species about which we know little will also score high. This is because an "unknown" score has been provided in all sections of the system, and each of these unknowns can equal the score assigned to the most desperate condition. It is suggested that total scores include the unknown component listed separately so that the contribution to a total score based on incomplete information can be identified. The first value will be the total score assigned for all sections, and the second, the number of these total points that were the result of unknowns. Thus, a plant could receive a score 69/15, meaning that 15 of the 100 points were based on a lack of data. Most likely, action on a species about which little is known would therefore be directed at providing information needed to assess its status. Obviously, if an imminent threat which could wipe out the species has been identified, action to halt this threat would be taken regardless of the need for information.

The evaluation system which follows has been constructed to be as flexible as possible to cope with the huge differences in quality and quantity of available information, and the great array of differences in biological characteristics between plants. Once plants have been scored with the evaluation system, and other information about them has been considered, the scores will be used to determine if they rate an endangered status.

ENDANGERED SPECIES PRIORITY SYSTEM

I. CURRENT STATUS OF POPULATION (30 POSSIBLE POINTS OF 100 TOTAL)

A. Index of population size (13/30)

1. No reduction in numbers and/or distribution—0.
2. Descriptions indicate some reduction in numbers and/or distribution—1.
3. Counts or estimates indicate some reduction in numbers and/or distribution—2.
4. Descriptions indicate few populations, or populations possibly always few—4.
5. Counts or estimates indicate significant reduction from former numbers, or data indicate populations probably always few—7.
6. Descriptions indicate possible extinction, extremely few population or severe reduction from former numbers—10.
7. Counts or estimates indicate severe reduction from former numbers, or descriptions indicate probable extinction—13.
8. Population size *unknown* —13.

B. Index to population trend (17/30)

1. Data or descriptions indicate a stable or increasing population—0.
2. Population stable or increasing, but data or description show a history of large fluctuations in numbers—2.
3. Verbal description indicates declining population—6.

4. Population declining but data or descriptions show a history of large fluctuations in numbers—8.

5. Preliminary counts or estimates indicate a pattern of decreasing numbers—11.

6. Counts or estimates indicate population decline of several years duration which will, if unchecked, lead to extinction within 50 years—14.

7. Counts or estimates indicate population decline of several years duration which will, if unchecked, lead to extinction within 25 years—17.

8. Population trend *unknown*—17.

Total points for Section I—

Unknown component of total (Points based on lack of data)

II. VULNERABILITY (40 POSSIBLE POINTS OF 100 TOTAL)

A. Reduction in amount and/or suitability of critical habitats which has occurred or is imminent (11/40)

1. No reduction (not a problem)—0.

2. Slight reduction (no urgent problem)—1.

3. Significant reduction (up to 1/2)—3.

4. Severe reduction (more than 1/2)—5.

5. Approaching total loss—8.

6. Total loss of original habitat—11.

7. Insufficient knowledge (*unknown*) as to what constitutes critical habitats—11.

B. Rate of reduction in amount or suitability of remaining critical habitats—present or imminent (3/40)

1. No further reduction (not a problem)—0.

2. Slow (critical problem in next 50 years)—1.

3. Moderate (critical in next 25 years)—2.

4. Rapid (critical problem now or in next 5-10 years)—3.

5. *Unknown* rate of reduction—3.

C. Distribution (10/40)

1. Known from 9 or more counties, common locally—0.

2. Known from 4-8 counties, population few—2.

3. Known from 1-3 counties, common locally—4.

4. Known from 1-3 counties, population few—6.

5. Known only from 2 localities (in different vegetation zones) or known only from type locality (extant)—8.

6. Known only from type specimen (extinct?)—10.

7. Distribution *unknown*—10.

D. Reproductive rate of taxon (8/40)

1. Normal for the species—0.

2. Slightly less than normal—2.

3. Much less than normal—6.

4. Reproduction not occurring—8.

5. Reproductive rate *unknown*—8.

E. Environmental contaminants, competition, heavy grazing or harvesting

1. Not present or problem—0.

2. May exert some adverse effect—3.

3. Likely to exert adverse effects or known to exert adverse effect on similar plants—5.

4. Present and known to exert adverse effects—8.

5. *Unknown*—8.

Total points for Section II—

Unknown component of total (points based on lack of data)—

III. RECOVERY POTENTIAL (30 POSSIBLE POINTS OF 100 TOTAL)

A. Protection of habitats (7/30)

1. Critical habitats protected or protection not required—0.

2. Needed habitats in state or federal ownership; long term protection assurable—

3. Requires purchase or transfer of critical habitats—4.

4. Protection essential but difficult or impossible to assure—7.

5. Needs for habitat protection *unknown*—7.

B. Management of succession (6/30)

1. Critical successional stages not in short supply—0.

2. Species requires early to mid-seral stages of communities which are in short supply or soon will be—3.

3. Species requires mature to climax communities which are in short supply, or species has highly specialized habitat requirements that are in short supply and cannot be readily provided—6.

4. Insufficient knowledge (*unknown*) of management technique to maintain optimum habitat—6.

C. Potential for growth of population (expressed as percent growth normally possible from one season to the next under favorable condition) (11/30)

1. High—growth rate greater than 100 percent—0.

2. High—intermediate—growth rate 50 to 100 percent—2.

3. Intermediate—growth rate 25 to 50 percent—4.

4. Low—intermediate—growth rate 10 to 25 percent—6.

5. Low—growth rate 5 to 10 percent—8.

6. Very low—growth rate 0 to 5 percent—11.

7. *Unknown* growth rate—11.

D. Potential for recovery (6/30)

1. Following restoration of habitat, species should become ecologically secure—0.

2. Maintenance of the species will require continued high intensity management—3.

3. Present hope for preservation of the species requires botanic garden cultivation—6.

4. *Unknown* potential—6.

Total points for Section III—

Unknown component of total (points based on lack of data)—

EXPLANATION OF EVALUATION SYSTEM SECTIONS

I. CURRENT STATUS OF THE POPULATION

Under this heading, population size and trend are combined to provide an index to the current numeric status of the species. Here, we first approach the critical question of how to evaluate the *amount and reliability of information* available on endangered species.

In a few endangered species, such as Texas wildrice (*Zizania texana*), direct enumeration of the size of the population is possible. For most species estimates are usually lacking and here this is the case, generalized statements are usually all that can be given to indicate the size of the population such as: "rare," "populations few," "possible extinct." Even here we feel that some effort should be made to organize these statements into a ranking from "approaching extinction" to "abundant" so that a specialist in a particular species will be able to choose from standardized, verbal descriptions that might best fit his appraisal of the status of the population.

For many endangered species, the trend in population size is more critical than the current size of the population. A downward trend in population size may reflect deterioration of the habitat, reproductive failure, or increased mortality. Estimates of population size in species with a high reproductive potential may be highly variable, and may reflect varying reproductive success or survival rates each year. For this reason, the evaluation of population size and trend for these species should include several years of data to establish the long-term trend.

II. VULNERABILITY

We assess the vulnerability of a species on the basis of the deterioration of its habitat and characteristics of the species which cause it to become vulnerable. Those conditions affecting a species habitat, which in turn affect seral stages, reproduction and survival, can cause a species to become endangered. Critical habitats are defined as those essential elements in a species range that allow the species to reproduce at sufficient rate so that reproduction balances mortality over the long term; special niche requirements are met, and required isolation is provided.

Note that the section on critical habitats includes consideration not only of amount, but also of suitability of habitat, and that it also allows consideration of an imminent threat such as a large public works project which might drastically reduce habitat.

The potential of a species to become vulnerable is partly related to the degree of specialization exhibited by that species. This may be indicated by a restricted range indicating a relict taxon or speciation. If the populations within the state of Texas

are few, then this indicates a scarce critical habitat within Texas regardless of its range outside of Texas.

For instance, if an endangered insect is dependent upon a particular species of plants for survival, it is inherently more vulnerable than an endangered insect that relies upon several plant taxa.

Other aspects of vulnerability are reproductive rate, and special survival problems. Plants which are restricted to a small geographic range are more vulnerable than those which are dispersed widely or occur at a number of localized points. The presence of introduced taxa, or otherwise intensified interactions can create special survival problems through hybridization or competition. The special problem of herbicides may supersede other factors. Any single factor can conceivably override many or all, other in a determination of vulnerability. Obviously, if a threat to the habitat and/or population is so great that it becomes permanent, then human judgement can and should supersede this priority system in responding to this critical situation.

III. RECOVERY POTENTIAL

The recovery potential of an endangered species is defined as the potential to effect a meaningful improvement in the status of the population of the species. Endangered species that have little or no critical habitat left, in which inherent reproductive rate is very low, or which have a slow mean generation time reflecting very low capacity for population growth, may be difficult to rehabilitate. Some species may be in such a plight that their only hope lies in removal to botanical gardens for retention of the gene pool until habitat problems are solved. For some species, even this possibility may now be lost.

The first consideration in this section is an assessment of the potential for achieving long-term protection of critical habitats. This is followed by ranking of the potential to manage habitat by manipulation of succession, as a means to provide for critical habitats or specialized niche requirements. For example, the needs of a pioneer species that requires a habitat in an early stage of forest succession can be quickly and easily provided for by timber harvest, controlled burning, brush clearing, or managed grazing. To provide habitat for a forest-dwelling species that requires climax habitats, on the other hand, may mean protection of a forest for 150-300 years. If this type of habitat is in very short supply, the species may be beyond saving.

Another factor considered in assessing the potential for a species to recover from endangered status is its reproductive rate. Because of great differences in the reproductive strategies employed by species in different classes, it was apparent that we could not compare the several thousand seeds produced by annuals with the reproductive potential of perennials. A more meaningful expression of the recovery potential of a species is its capacity to reproduce itself and increase in numbers under favorable conditions. We recognize that the scoring of this section may require some mature biological judgements based on an assessment of the reproductive rate of the species and the expected survival rates of both seeds and seedlings so that an estimate of the rate of average potential population growth might be made. The scores for this section are assigned on the premise that a species that possesses a high average capability for population growth could be expected to respond readily to effective management of those factors responsible for its endangered status. Species with inherently low capability for annual population growth might be delayed a decade or longer even though conditions adverse to survival had been alleviated.

Some species with a low reproductive rate—such as the redwoods—also exhibit great longevity as adults. Longevity can be an advantage by allowing the species to persist while adverse environmental conditions are corrected. This undoubtedly mitigates, somewhat, against the extended time required to accommodate the slow growth of populations to a safe level.

Another assessment of the potential for a species to recover from its endangered status judges the level at which recovery is currently possible. Obviously, a species that needs immediate removal to a botanical garden for artificial maintenance of the gene pool until other habitat factors can be corrected is less secure than a species that can become ecologically secure once preservation of scarce habitats is assured.

THE NUMERICAL SCORE

The numerical score indicates the status of the species as determined within the previously stated conceptual framework of the evaluation system. It is not a "magic number" but a guide to be used to list plants potentially endangered. The score may

also partially indicate our general lack of knowledge about the species, taxa like it, or certain areas of natural science.

Mr. FORSYTHE. You also mentioned that most of the proposed plants are in Hawaii and California.

Dr. TAYLOR. Right.

Mr. LEGGETT. That is part of the United States.

Dr. TAYLOR. Both those area.

Mr. FORSYTHE. Do you know, if there is a delineation of these by State or area, so that perhaps we could allay some of these fears that every State has hundreds?

Dr. TAYLOR. Yes. The Smithsonian, about 2 months ago, published a book¹ which includes the list of endangered species, and it does so not only by family, but lists them by State, so you can actually go in alphabetical order to a State and see which species are actually threatened or endangered, and count up how many there are.

Mr. FORSYTHE. Mr. Chairman, could staff see to it that the committee has a copy of the material mentioned by Dr. Taylor?

Mr. LEGGETT. Maybe we ought to have the Smithsonian up here at some point and have them explain the book and bring their charts and graphs. We also, ought to bring the staff of the Department of Interior up here to get their views on where they are going on this legislation.

Mr. FORSYTHE. On plants that may be relatively abundant in some areas, but are rare in others, do you believe that in an area where they are rare, we must list them as endangered?

Dr. TAYLOR. I think the National Endangered Species Act seems to indicate that only those that are rare from a national viewpoint should be included on the list.

If they are very abundant someplace else, but rare in a certain area, then it is up to a State, as a local entity, to decide whether or not something should be saved for the use by that State, say, as a part of its natural heritage.

Mr. FORSYTHE. Let me make sure I heard you—rare on a national basis. You would interpret the act both as to plants and animals as reading in that way?

Dr. TAYLOR. Right. If it is abundant in an area, but may be rare in some other areas, it is not a nationally endangered species. Even for the United States, many of the Texas plants have not been included that are abundant in Mexico.

It may be rare within the United States, but may be abundant outside of the boundaries, and thus has been excluded as nationally endangered species, or be set aside with an idea that their populations from even a worldwide aspect are not really endangered.

Mr. FORSYTHE. I think that the Interior Department has a different interpretation of the act and that it has been reflected in their decisions in endangered species matters.

They may well be abundant someplace else, but they are not in some particular location. I think that would be somewhat of a disregard for the intent of the act if your interpretation was generally accepted.

¹ The book referred to is "Endangered and Threatened Plants of the United States," by E. S. Ayensu and Robert A. DeFilipps, published 1978 by Smithsonian Institution and the World Wildlife Fund, Inc.

Dr. TAYLOR. Yes, I think this is something for each State to decide what it is going to do.

Mr. FORSYTHE. Your point is that the State should have that right under its own laws. But as to the National Endangered Species Act, it should relate to a national situation?

Dr. TAYLOR. Right. I would like to say that I really believe that the Endangered Species Act should remain as it is, and not be altered, and really give it a chance to work.

I think the Tellico snail darter was an unfortunate thing because of the situation.

Mr. FORSYTHE. It is true not only of Tellico but, I think, of every really controversial issue that they have arisen in a situation where the act followed the initiation of the project and, therefore, made it far more difficult for both sides of the issue to resolve.

Dr. TAYLOR. Right.

Mr. FORSYTHE. I think it is unfortunate that some of the machinery, as far as the Government is concerned, really didn't get in place until this year. So, we have been out trying to do things, perhaps without the machinery sufficiently in gear.

So, hopefully we can keep it, and keep it so it does work and do the job that it should.

I must confess, I think we have a very serious problem as far as the Congress is concerned this year, in view of the controversy that is surrounding the act. How to allay that is a problem the committee has to wrestle with.

Thank you, Mr. Chairman.

Mr. LEGGETT. Mr. Hughes?

Mr. Hughes. Thank you, Mr. Chairman.

Doctor, I gather from your testimony that you are opposed to any weakening of the amendments directed to section 7.

Dr. TAYLOR. I think for at least 20 years we ought to give it a chance to try to work.

Mr. HUGHES. I gather from that, then, that you would be opposed to the efforts of the Senate, as proposed by the Environment and Public Works Committee, that would set up another appeal tribunal within the Agency.

Dr. TAYLOR. Yes, I think there is also any excuse to go ahead and build a project. Lake Texoma was built for national defense over the objections of the State of Oklahoma. Its main use now is recreation.

During the time and place there is always going to be some overwhelming concept that may push a project over. I think we ought to give the act about 20 years to really work and really see if there are going to be some unresolvable conflicts that cannot be worked out. Then perhaps it would be time to make some adjustments.

But I don't think the act has really had the time to work. The agencies have just now really begun to get the information they need to do the planning that would involve adjusting to endangered species. I really believe it would work.

Mr. HUGHES. So, in essence, you are opposed to any alternatives being suggested?

Dr. TAYLOR. At the present time, yes. I may be willing to change my mind in the future, as time goes on. But I think the act should

be given a chance to really work and see how it is going to do, without weakening it right now.

Mr. HUGHES. Thank you.

Mr. LEGGETT. Thank you, Mr. Hughes.

Thank you, Doctor.

Next we have Dr. Weldon Retan from the Alabama Conservancy.

STATEMENT OF DR. J. WALDEN RETAN, ALABAMA CONSERVANCY, BIRMINGHAM AUDUBON SOCIETY, AND CAHABA GROUP, SIERRA CLUB

Mr. LEGGETT. Dr. Retan, your statement, together with a letter from John C. White, the Regional Administrator, will appear in the record at this point.

[The information follows:]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
REGION IV,
Atlanta, Ga., April 19, 1978.

J. WALDEN RETAN, M.D.,
*Sierra Club Cahaba Group,
Birmingham, Ala.*

DEAR DR. RETAN: I share your concern for further delay in implementing pollution control in the Cahaba River Basin as expressed in your letter of March 16, 1978. Our extensive involvement in this basin through the 201 Facility Plan; the EIS, and the 208 Areawide wastewater management plan are very close to completion. We are anxious to follow up these planning efforts with constructive action.

All facilities recommended by the EIS will be required to meet Fish and Wildlife standards for water quality in the Cahaba River. Ammonia and chlorine toxicity have been considered. Facilities of this type are widely used and are generally considered adequate to protect downstream water uses for Fish and Wildlife, recreational activities, and even drinking water supply. In the absence of any specific biological requirements for these two species, we must conclude that the proposed facilities will provide adequate protection. Therefore, I do not believe that studies related to the biological requirements of the Goldline Darter and the Cahaba Shiner will cause any delay in implementing pollution control actions.

Sincerely,

JOHN C. WHITE,
Regional Administrator.

STATEMENT OF J. WALDEN RETAN

Mr. Chairman, my name is Walden Retan. I am a physician engaged in the private practice of medicine at 1701 9th Avenue South, Birmingham, Ala. I am here representing the Birmingham Chapter of the Audubon Society and the Alabama Conservancy.

Several weeks ago this Subcommittee heard testimony that described the purported damage to Birmingham area commercial development that might occur if the Goldline Darter and the Cahaba Shiner were listed as endangered species under the provisions of the Endangered Species Act. You have heard the request either that the fish not be listed, or that the Act itself should be modified so that this supposed damage could not take place.

Mr. Chairman, my purpose here today is to refute that testimony. There is no threat to development in the Cahaba River Basin from the application of the Endangered Species Act. There is no reason to consider modification of the Endangered Species Act because of events in Jefferson County, Alabama.

The Cahaba River, downstream from Birmingham, has long felt the impact of city pollution. The Vice-President of the Chamber of Commerce is fond of quoting a 1925 article that "coal mine operations, cows, dogs and people were all degrading the Cahaba River with raw sewage and other filth." (Exhibit A) Environmentalists agree.

Environmentalists and developers also agree that in the intervening fifty years, the river reach that is the habitat of the Goldline Darter and Cahaba Shiner has been considerably upgraded. Unfortunately, it would be wrong to imply that the

improvement has been a steady progressive function. Within the last decade, in particular, one sewage treatment plant, the Patton Creek Plant, has become largely obsolete and heavily overloaded. Raw sewage bypasses the plant during rain storm events and enters the Cahaba. It is most likely as a consequence of this malfunctioning plant that Dr. John Ramsey of Auburn University encountered increased difficulty in collecting these rare species, and found evidence of degradation of their habitat. (Exhibit B)

A 201 Facilities Plan has been drawn up pursuant to the Clean Water Act, and an environmental impact statement relating to that 201 Plan is scheduled for completion this summer. Speaking as a member of the Citizen's Committee that is advisory to the EIS contractors, I am thoroughly satisfied that the facilities that will ultimately be constructed will remedy the problems of the Patton Creek Plant, and upgrade the quality of water in the Cahaba.

Now I don't want you to get the impression that the development of this plan has been free of difference of opinion, or even of controversy. When completed, the Cahaba Treatment Plant that is on the drawing boards will provide fully 96 percent of the water in the Cahaba River during low flow periods of time. In one of its incarnations, that Plant was designed to discharge fully chlorinated water into the river bed, with chlorine concentration such that neither germs nor fish could live therein. However, when we in the environmentalist community brought this forcefully to the attention of the Environmental Protection Agency, which we did with the welcome assistance of our Congressman, Mr. Buchanan, we pointed out that the chlorine endangered all the fish, and not just the rare ones. The plant design that was then on the drawing board violated the Clean Water Act. The Endangered Species Act was irrelevant.

Mr. Chairman, someone who would use the Endangered Species Act to retard development in Jefferson County would have to prove that the candidate endangered species could not survive in water that is cleaner, and of higher quality, than the water they now inhabit. I think this viewpoint is without merit. I am submitting a letter (Exhibit C) from John White, administrator of EPA, Region IV, supporting that conclusion.

As one of my colleagues points out, the application of the Endangered Species Act to Jefferson County is nothing but a red herring, and *that is*, unfortunately, not itself an endangered species.

[From the Birmingham News, Dec. 27, 1977]

ECONOMIC FACTORS ARE THE ISSUE HERE

Most responsible Americans place a high value on animal and plant wildlife as an integral and desirable part of our environment. Who could possibly be against preserving our national symbol, the great American bald eagle or the northwest salmon or grizzly bear? Many species are valued in some way—commercial, recreational, educational or scientific—and they are well worth protecting.

But if a species has no commercial value, no sporting value, no educational value and no scientific value, then of what value is it? With all the pressing monetary problems we face as a nation, can we afford the loss of millions of dollars in jobs, homes and taxes to protect a species that has no value and which, in fact, cannot really be proved to be endangered?

Locally, the issue is centered around the proposed endangered status for the Cahaba shiner and the goldline darter—two minnows that don't quite measure up to the bald eagle. Their combined length is all of four inches. The Department of Interior's written proposal admits that these minnows are not being used for commercial, sporting, educational or scientific purposes (Federal Register, Nov. 29, Page 60765). It would seem logical to first prove the value before setting about to determine whether these little fishes are really endangered.

Even though the Cahaba shiner and goldline darter are hard to find, we must wonder just how rare they are when Dr. John Ramsey, who discovered the species during the 1960s, readily admits that they "probably exist in greater numbers than is apparent." And while they were discovered only some 10 years ago, there is no way of knowing just how long they have been in the Cahaba River. If we have no records to show if they are increasing or decreasing in population, how can scientific reasoning be used to claim that they are in danger?

The Department of Interior has been reported as saying that growth in Jefferson County along the Cahaba and strip mining run-off are dangerous for the fish.

But the truth is, conditions along the Cahaba 50 years ago were worse than they are today. One of Birmingham's founding fathers, T. H. Molton, said in an article in

a 1925 edition of the Birmingham Age-Herald that "coal mine operations, cows, dogs and people were all degrading the Cahaba River with raw sewage and other filth."

Since no one knows for sure, there is a good chance that both fish existed in the Cahaba River in 1925 under most adverse conditions. Conditions along the Cahaba have vastly improved in 50 years, and they will continue to improve as proper sewage treatment facilities are allowed to be built or expanded.

Perhaps we should all begin to question an Endangered Species Act that attempts to protect all species, including those of no value. Dr. John Texas, points out that 50 species disappear from our planet every century. He says that about 100 million species of animal life have become extinct since life began on earth. As Darwin pointed out, animals come and go; this is the essence of evolution.

The Endangered Species Act, which attempts to burden us with a guilt complex, does not take into consideration that millions of species disappeared before man's appearance on earth.

What thought has been given to the economics of the Endangered Species Act and to the politics of how the federal law is trying to be used in the Birmingham area to stop growth? If the fish are classified as endangered, all federal spending must be geared to assure that their habitat will not be harmed. The impact on the Cahaba basin between now and 1980 if the Cahaba sewage treatment plant is not allowed to expand in an orderly manner will mean a loss of \$220 million in construction and 7,000 premanent jobs.

Environmental extremists are kidding themselves if they think the citizens of this area want to injure our economy over a fish that you can't catch, you can't eat and can hardly see. Most people wouldn't know the goldline darter from the furbish lousewart, and very few care.

The taxpayers are the endangered species—endangered partly because a few would place the value of a useless minnow above the value of jobs and homes for the thousands of young people on whom we've spent millions to educate and who will have to move from this area if we do not plan now for them.

Which is more important—our young people or a minuscule minnow whose value would be seriously questioned by even the hungriest of barnyard cats? Let's all hope that the shiner and darter live to a ripe old age, but not at the expense of the well-being of the Birmingham area taxpayers.

ALABAMA COOPERATIVE FISHERY RESEARCH UNIT,
U.S. FISH AND WILDLIFE SERVICE,
Auburn, Ala., March 13, 1978.

Mrs. LINDSAY C. SMITH,
3221 Pine Ridge Road,
Birmingham, Ala.

DEAR MRS. SMITH: Thanks for your query on what it is we ichthyologists have in the way of evidence that "eutrophication" is increasing in the upper Cahaba River. I mentioned eutrophication as one of the apparent threats to well being of certain Cahaba River fishes in both of the Alabama rare fish articles I helped prepare in 1972 and 1976. This was based on a qualitative feeling (perhaps defined best as "insight") developed through years of seining, shocking, and even rotenone sampling in a diverse array of fish habitats.

I have been collecting fishes in the Cahaba River main channel since 1962, and have observed the appearance and spread of substrate bluegreen algae at several localities within the past 14 years. The algae have entangled silt particles to the point where once "clean" marginal rock and rubble even just above Centreville now are coated with a greenish-tan scum.

You probably know a bluegreen algal coating usually is associated with gross pollution by untreated sewage in streams. However, I think some of this type of development found downstream from the recovery zone (where dissolved oxygen no longer is limiting to fishes) indicates overly high nutrient levels which have thrown the normal ecosystem out of balance.

One place in the Cahaba seems especially to have been impacted in this way, namely the area just below the Shelby County Highway 52 bridge. We used to find the goldline darter, Cahaba shiner, and blue shiner there as recently as 1969. A visit in late 1977 yielded lots of fishes, including minnows and darters, but we found none of the specialized forms. This in itself is not unusual, because of their rarity, but I also saw a diminution of riverweed (*Podostemum*, typical of broad rapids), apparently displaced by a substantial growth of bluegreen algae on much of the rock and rubble substrate. I also noticed a distinct sewage smell overall. I don't know what the nutrient levels are at the Helena locality, but despite the availabil-

ity of adequate dissolved oxygen the site appears to have been disturbed by eutrophication.

One thing I have learned since coming to Auburn is that one needs meaningful facts and figures to communicate effectively with other technical people and policy-makers. Your letter was timely because I very recently completed an attempt to translate my qualitative misgivings about eutrophication into something I can communicate to non-ichthyologists. To do this I read a fair amount in the field of water quality (copies of sections from two of the most illuminating articles enclosed), collated some data from a variety of sources to fix it in terms familiar to me, then brought it for examination by Auburn's Dr. Claude Boyd (a noted nutrient-cycles aquaculturist) to see whether I was off base. He agreed the situation in the Cahaba is deserving of some intensive limnological study.

As you can see from the articles and tables enclosed, there is a lot of work needed to fill gaps in knowledge on eutrophication in streams, especially in the Cahaba basin. However, given a naturally fertile limestone drainage basin, and given a rapidly growing, phosphate detergent-using population served only by secondary sewage treatment, I feel I have substantiated the qualitative opinion that eutrophication represents more than a potential threat to the wellbeing of environmentally sensitive fishes in the Cahaba River.

I hope these remarks are useful to you, and that the tables are adequately self-explanatory. Please let me know if you have further need for information on this or related subjects.

Sincerely,

JOHN S. RAMSEY,
Leader and Associate Professor.

Mr. LEGGETT. Now, as I read your statement, you refute the implication that the development as currently planned on the Cahaba River Basin will be jeopardized by the application of the Endangered Species Act.

I believe you indicate that in one of its incarnations the plant was programed to discharge heavily chlorinated water which would have jeopardized all of the fish seaward of the plant.

Apparently that incarnation has been modified, is that right?

Dr. RETAN. That is correct.

Mr. LEGGETT. You are not a lawyer, are you?

Dr. RETAN. That is correct, I am not a lawyer.

Mr. LEGGETT. It is your view that the Cahaba River plant will not conflict with any designated habitat of either the Cahaba shiner or the goldline darter.

Now, then, you present a statement from John C. White, Regional Administrator, and he says:

"All facilities recommended by the EIS will be required to meet Fish and Wildlife standards for water quality in the Cahaba River. Ammonia and chlorine toxicity have been considered.

"Facilities of this type are widely used and are generally considered adequate to protect downstream water uses for fish and wildlife, recreational activities, and even drinking water supply.

"In the absence of any specific biological requirements for these two species, we must conclude that the proposed facilities will provide adequate protection. Therefore, I do not believe that studies related to the biological requirements of the goldline darter and the Cahaba shiner will cause any delay in implementing pollution control actions."

That is his conclusion. It is your conclusion that upgrading of water quality as a matter of principle should not violate endangered species critical habitats?

Dr. RETAN. This is my belief. I think that the ruling legislation that is going to govern development in the Cahaba Basin is going to be the Clean Water Act, and its insistence on attainment of fish and wildlife quality in the Cahaba River.

Attorneys with whom we have spoken on occasion over possibilities of litigation repeatedly come to that act, and to its implementing regulations and not to the Endangered Species Act, as the instrument by which the Cahaba River may be maintained in the form its friends would like to see it.

Mr. LEGGETT. Is that particular project built to handle the existing development in the community plus projected additional development?

Dr. RETAN. It is being designed to handle projected additional development, yes, sir.

Mr. LEGGETT. And the reason that EPA approves it in its current magnitude is based on the anticipation of that future development.

Would you anticipate, or would it be your professional opinion, that reasonable future development to satisfy the utilization of this facility which is being constructed, likewise would not come into conflict with endangered species?

Dr. RETAN. It would be my professional opinion as a professional environmentalist, as well as a physician, that the projected sewage treatment facilities in the Cahaba River will handle the presently existing population, the projected growth in the Cahaba Valley, the projected growth at River Chase, and that the effluent from these developments processed through the plants that are on the drawing boards now will result in water whose quality will be such as to permit the survival of endangered species, and other species of fish in the Cahaba River, and that the Endangered Species Act is not really relevant to the concerns we have.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

You feel that the Endangered Species Act is not the problem in the Cahaba River situation. There is not a conflict insofar as endangered species is concerned.

The rather vigorous pleas that we have had from the members representing that region have been an expression of their fear that all development is going to be stopped, due to poor administration of the act.

Dr. RETAN. This is my belief, sir.

Mr. FORSYTHE. Is there an action under the Endangered Species Act to stop this development?

Dr. RETAN. There is no action in the Jefferson County area. There is none contemplated. The two species in question have not been listed under the Endangered Species Act.

As I have indicated in this statement, even if they were listed, someone who is going to propose an action would have to propose that those endangered species could not survive, or that their habitat would be adversely affected if they were provided better water than what they now have.

Mr. FORSYTHE. Therefore, you really see a nonproblem, as far as the Endangered Species Act is concerned. It is one that we really don't have to worry about.

Dr. RETAN. This is my belief, sir. I think what happened was that historically the Cahaba River was the subject of a candidate study for the national wildlife scenic river status.

There was initially a study that was disposed, as we understood, through the news media, to recommend favorably for national wild

and scenic status. This was followed by replacement of the team leader and news media indications then that the new team leader was disposed to recommend against national scenic river status.

Some of the environmental community, I think again—and I think their judgment was poor—said that they would use anything including the Endangered Species Act to preserve the natural wild scenic beauty of the Cahaba River.

I think the business community, supported by the congressional delegation, responded to that kind of a threatening overtone and, without examining whether or not there was any realistic basis, proceeded with considerable input into the news media and into this subcommittee, with the concern that development would be halted if these species were listed.

Mr. FORSYTHE. Where does the issue of wild and scenic rivers designation stand? Is that still actively supported by your organization?

Dr. RETAN. This is a study that is still ongoing. The results have not been released, although they are expected momentarily.

Mr. FORSYTHE. But you would support the designation as a wild and scenic river?

Dr. RETAN. We would.

Mr. FORSYTHE. But you do not see that conflicting with the problem at issue before this committee?

Dr. RETAN. I see no conflict between the wild and scenic status and the Endangered Species Act that we are concerned with, no.

Mr. FORSYTHE. Thank you, Mr. Chairman.

Mr. LEGGETT. Mr. Hughes?

Mr. HUGHES. Thank you, Mr. Chairman. I have no questions.

Mr. LEGGETT. Mr. de la Garza?

Mr. DE LA GARZA. No questions.

Mr. LEGGETT. Thank you very much, doctor.

Dr. RETAN. Thank you, sir.

Mr. LEGGETT. Nice to hear a free professional opinion.

Next we have Dean Donald Hanson, Tennessee School of Architecture. Very nice to have you here.

STATEMENT OF DONALD HANSON, DEAN, TENNESSEE SCHOOL OF ARCHITECTURE

Mr. HANSON. Thank you, Mr. Chairman.

The report we are presenting today is the final report of a draft presented last year to the Senate subcommittee. This report was requested by this committee in a letter from Representative Leggett, which is indicated in the section of the report which I believe you have before you—

Mr. LEGGETT. Who is paying for the report?

Mr. HANSON. The report, sir, is not being subsidized. It is being taken out of funds we had accrued from technical service work within the college.

Mr. LEGGETT. Thanks very much.

You have a lengthy report of 58 pages. That will be included in our record, and you can go ahead and proceed to summarize the report.

[The information was received and placed in the record files of the subcommittee.]

Mr. HANSON. The report was to be an objective analysis of the proposal by TVA for the development of the Tellico project and an exploration of alternative futures that have either been previously discounted or not considered by the investigations of the TVA.

Our investigations were conducted initially over a very tight schedule of 70 days, presented in draft form last year, and subsequent to that we had time to develop and substantiate many of those early investigations, and have made several revisions.

I would like to summarize very quickly that there are in our minds several salient points that need to be made at the beginning. One is there is no doubt that viable alternatives exist.

I might insert here that our investigations are looking at social and economic factors, but specifically when we talk about viability we are making very hard reference to economic factors.

There is a great deal of confusion, and perhaps misinformation, about the economic viability that is presented at the testimony to the several committees.

Essentially, our first presentation identified the fact that, in addition to the river system impoundment proposal by the TVA, there were at least two other generic approaches to the completion of the Tellico project.

They are a river system retention or, as we refer to in the common phrase as a dry dam proposal, accepting the river as is today; the provision for a second free-flowing channel to be cut through the existing earthen section of the dam and all existing river systems be allowed to remain or return to their natural state; third, which heretofore had never been considered is that of the river system retention, or the dry dam concept, but with selected impoundments of tributaries.

This allows us to do two things essentially—provides amenities which were the goals of the TVA proposal for residential development, and second, and perhaps more importantly, they arrest a rather critical erosion condition that had set in because of site preparation by TVA.

The second issue that we address ourselves to are claims that only impoundment would support the planned activities; that is to say, the planned economic activities necessary for optimal cost benefit.

This is not so. Almost all instances of activities considered or rejected can be accommodated in any of these three generic approaches.

As an example, industry residues, recreation, tourism, all can be accommodated either in the impoundment or reservoir proposal, the retention proposal, which is the dry dam proposal, or the combination, which is the third option, the river system tributary impoundment.

This is an important factor because what we are saying is that if the issue is to be determined on the basis of economics, the river system impoundment or reservoir may not prove to be the most economically viable of the options available.

The only activity scheduled by TVA which would be precluded by the dry dam system is that of the energy supplement to the existing Fort Loudon dam generating facilities.

This amounts to, of course, a considerable amount of electricity in that it amounts to about 24 megawatt potential annually, and has an appraised value on today's dollar of close to \$3 million.

But it should be understood that that impoundment would take virtually out of existence an extensive amount of high grade agricultural properties which would have no yield.

Using the figures that have been presented by TVA prior to this hearing, and reviewed by the General Accounting Office and the Comptroller General, they submitted to you at that time a 1973 figure that the agricultural yield for that TVA proposal would be \$6.4 million. On the basis of the report, then, you have a statement that 1973 dollars of \$6.4 million, again by agriculture, would have to be the tradeoff for potential 1978 gain of \$3 million for electrical power.

If we take into account the change in dollar value, we find that the agricultural, again in 1978 dollars, which should then be compared to the \$3 million by the most conservative estimate, would be \$8 million. That is a low range that was proposed as a comparison.

The environment lists at the same time TVA proposed the agriculture profit potential of \$6.4 million, proposed a high range of \$17 million, which was challenged in the GAO report and re-established. Again, if we inflate the high range, that would mean the agricultural gain alone would be in excess of \$24 million today.

Our purpose, then, is to look very objectively and very critically at the array of testimony that we have seen presented here and in the news media.

One of the suppositions that was presented but never clarified by TVA is the fact that the industrial component alone would only succeed and only go ahead if, in fact, there was impoundment to provide for barge traffic and for extensive water supply. Our investigations establish the fact that only the additional energy potential would be lost by strategies other than impoundment, while all other TVA proposed activities would be accommodated in all other generic approaches.

This is particularly true for the proposed industrial development which has railroad and highway access to the site. Only if the project has not been specifically intended for preselected industries which have abnormally high water supply and discharge demand would the other nonimpoundment strategies be discounted.

On the other hand, the reservoir option precludes many alternatives, some of which promise significant economic potential. This is particularly true, as I mentioned to you, for the agriculture components.

I would like to make specific reference, then, as well, to the dam. There is, I think, a misunderstanding that the dam per se equates to employment per se. This is a myth in the sense that both dams are in existence and the impoundment would not change the ability of those dams to generate significant new employment rather than the presence of the dam would justify the development of some other activity which would have economic yield. Primarily, TVA proposes that to be through industrial development.

Industrial development can go ahead in a dry dam situation, the generic-three proposal, which is the dry dam plus tributary impoundment or the reservoir. It does depend on the barge traffic,

and there is evidence that the barge above the Fort Loudon Dam has diminished in years——

Mr. LEGGETT. What page is that?

Mr. HANSON. Industrial?

Mr. LEGGETT. I am trying to figure out how the Fort Loudon Dam relates to this dam?

Mr. HANSON. If you look at the cover, sir—well, let me back off. If you want to look at the cover, there is, above the A in alternative futures, you will see the Fort Loudon Dam.

Mr. LEGGETT. Above where?

Mr. HANSON. It is this point here [indicating].

Mr. LEGGETT. This is Fort Loudon?

Mr. HANSON. Yes, the dam which has been there for a number of years.

Mr. LEGGETT. Where is the Tellico Dam?

Mr. HANSON. It is just south of that. There is a long line——

Mr. LEGGETT. Which way is south?

Mr. HANSON. To the bottom of the sheet. The proposed connection is, however, laterally from lower left to upper right.

Mr. LEGGETT. Where it says proposed dam access?

Mr. HANSON. And proposed canal. There is a better illustration of that, if you would, on page 46. If you go to that page, there is yet another illustration of it, which I shall come to in a minute. It shows the earthen dam horizontally here. That dam is in place, including the concrete structure, which is the spillway on the right-hand side of that dam, but there is a canal that goes off to the left of that sheet which comes then behind that roadway system which you see here, which is the entrance——

Mr. LEGGETT. I am not following you at all.

Mr. HANSON. Let me try another document here. I apologize. My familiarity with this is a disadvantage at the moment.

Mr. LEGGETT. Fort Loudon Lake is not affected by this dam; is that right?

Mr. HANSON. That is correct. It becomes literally an extension of that water basin but above the Fort Loudon Dam, even though the dam——

Mr. LEGGETT. Does the water flow from left to right?

Mr. HANSON. The water flows from left to right in the cover sheet, when the dam is closed. In other words, it will come from the Little Tennessee River through a canal——

Mr. LEGGETT. What makes Fort Loudon Lake, then?

Mr. HANSON. That is behind the existing Fort Loudon Dam, which is right in the center of that configuration.

Mr. LEGGETT. That would presume that the water flows from right to left, wouldn't it?

Mr. HANSON. Yes, but it does not. With the impoundment, it will reverse its flow. You are correct in that the level of the Little Tennessee River is some 70 feet below the high level of the Fort Loudon Dam, but that would be changed on impoundment.

Mr. LEGGETT. Where is the Little Tennessee River on this?

Mr. HANSON. It is coming up from the bottom, sir.

Mr. LEGGETT. Does that flow from south to north?

Mr. HANSON. Yes.

Mr. LEGGETT. So that area, Hall Bend and Jackson Bend, would be flooded out; is that right?

Mr. HANSON. That is correct. It would be illustrated best if you would look on sheet No. 24, just after sheet 23.

Mr. LEGGETT. I am interested how the water gets from the Little Tennessee River into Fort Loudon Lake.

Mr. HANSON. They have built a canal, sir, which is currently plugged. There is an earth plug in it, and when the water level is brought up after impoundment, if it occurs, it would then flow back into the basin above the Fort Loudon Dam, northerly through the proposed canal.

Mr. LEGGETT. Is the canal located on the map here?

Mr. HANSON. Yes, it is indicated as a proposed canal, in the black area, right here.

Mr. LEGGETT. I see the words proposed canal, but I don't see anything outlined.

Mr. HANSON. I think the best diagram for that would have been the one that I referred to.

Mr. LEGGETT. On page 46?

Mr. HANSON. If you go back again to page 46, and if you would look here just for 1 minute, the dam is this horizontal—

Mr. LEGGETT. I see the canal here, and I see the plug in it. Is that lake not being used at the present time?

Mr. HANSON. No, the canal is not usable. It is retaining water from Lake Loudon, which, if it was released, would flood the basin of the Little Tennessee River.

Mr. LEGGETT. Apparently there is no water that flows from the Little Tennessee River into Fort Loudon Lake?

Mr. HANSON. Currently that is true.

Mr. LEGGETT. And Fort Loudon Lake gets its water from what source?

Mr. HANSON. The Tennessee River, which comes down from the Holston and French Broad River above Knoxville.

Mr. LEGGETT. Then for that canal to be usable, do you need the Tellico project?

Mr. HANSON. The only purpose of that canal would be to allow barge traffic to use the locks of the Fort Loudon Dam and to avoid building locks in the proposed Tellico Dam, so that the schedule, as TVA has outlined it, would be the barge traffic would come through the Fort Loudon Locks and then reverse its course and swing around, coming through the canal into the impoundment behind the new Tellico Dam.

Now if, in fact, that impoundment does not occur, that canal will not be used.

Let me continue with my references to the industrial section. It may become clear to you the relevance of this question.

Mr. HANSON. The industrial development potential exists virtually equally under all of the three generic approaches. As a matter of fact, at this time TVA, just this past week, announced the beginning of the industrial development in the area designated for industrial development. So the demonstration of that point, I think, has been made by a change in TVA policy, to begin with.

Mr. LEGGETT. Let me ask you this: Have you gone over these options with Mr. Freeman?

Mr. HANSON. Not personally, although he has a copy.

Mr. LEGGETT. As I understand it, he is discussing options with Mr. Herbst this morning.

Mr. HANSON. Correct.

Mr. LEGGETT. Are these the options he is discussing?

Mr. HANSON. I don't know what he has on his agenda. I know he has access to this and, from public statements, has read the document or at least a draft of the document. I don't think he has read the final report. I am quite certain he has not.

Basically, what we are saying is that the industrial element in the proposed activities is the one that generates the most significant employment opportunity and, as such, has been attributed to the greatest benefit in the cost-benefit analysis.

However, the assumption that industry can only go ahead with impoundment is in our opinion not correct. The site that has been proposed by TVA does have adequate rail lines and highway access to it at this time to compensate for any transportation need that the industrial park needs.

There are two other components that should be considered about the industrial proposal. One is its location, to begin with.

Mr. LEGGETT. Where is the location of the industrial park?

Mr. HANSON. About midway on the site.

Mr. LEGGETT. Does anybody have a map of the project?

Mr. HANSON. It is on page 36. It is at the intersection of Highway 411, midway in the Tellico project.

Page 36 shows the proposal by TVA and also, in yellow, the adjacent properties already zoned for industry. It should be brought to your attention that some 5,000 acres TVA has talked about for industrial development is a significantly large proposal. It does constitute better than 8 square miles of industry in an area that has none. It should be brought to your attention as well that within the region there is a great deal of competition for industrial development, and some 63 percent of the industrial-zoned land in Knoxville proper, the metropolitan district, stands vacant today and would, in fact, be competing for the industry that would be attracted or hopefully marketed into this project.

Mr. LEGGETT. Does the industry there need the project to go ahead?

Mr. HANSON. In my opinion, no, sir. There is no industry there at the moment, to begin with, and industry coming in does not seem to be particularly attracted to waterfront property in that much waterfront industrial-zoned property remains vacant within the immediate vicinity.

Mr. LEGGETT. Why did we commission the School of Architecture to do this study?

Mr. HANSON. I got a phone call from your office, and that was followed by a letter from you personally that requested the study.

Mr. LEGGETT. I understand that, but I wonder why we selected you?

Mr. HANSON. I don't know what the reasoning was, but I personally have done a lot of this, and also internationally, for some time.

Mr. LEGGETT. This is not regularly within your professional expertise?

Mr. HANSON. We do this regularly for a number of nations, and throughout the region I do a lot, and have for years.

Mr. LEGGETT. This is part of the regular business of the School of Architecture?

Mr. HANSON. It may be unique to other schools of architecture but it is common within our school, and particularly common to me.

Mr. LEGGETT. And your school involves teaching young people to design parks and refuges as well as dams and buildings?

Mr. HANSON. Yes, a number of things. One part we do which might have been reviewed to whoever commissioned this, would be the fact we do a lot of what we call development compatibility studies. We look at undeveloped land areas and help set up guidelines for its development which are compatible to economical and environmental goals.

Mr. LEGGETT. You brought this study here to us and you think it may have been reviewed by other persons with Mr. Freeman. What else have we done with the study?

Mr. HANSON. Well, our task was to bring the study and report it to you, sir, and I don't know what other usage you would have. I hope it would be of benefit because it establishes the fact that there is a great deal of myth in public information about what are the issues involved in the Tellico project.

Mr. LEGGETT. Have you developed cost benefit ratios on these various alternatives?

Mr. HANSON. No; we were specifically not asked to do that, nor do we have the funding to do it. This is an expensive activity. It should be done, in our estimation, but based on a broader reference than just the cost benefit or almost cost accounting analysis on the specifics of the Tellico project as proposed by TVA.

Mr. LEGGETT. Please explain the various options. I see 9 and 10, and I don't know whether we have more than that. Are those option diagrams or alternatives?

Mr. HANSON. Yes, we talk here——

Mr. LEGGETT. I see a 9 and 10, but no 4, 5, or 6.

Mr. HANSON. Again, if you will look on page 4, we talk about eight land uses which have been proposed by TVA and others which we have included, and we have also talked in terms of economic program options, which are specific projects applied to the site within the conformance of land-use policy, and we list seven of those, many of which have not been considered before.

And we have tried to, on that diagram on page 4, illustrate its compatibility to the different options of approach for the final development of the Tellico project. But our study pointed out several things which I repeat, and one is that there are options that warrant investigation because, No. 1, they may very well be much more economically beneficial to the region than the one proposed originally by TVA and, No. 2, that analysis that is being done by GAO and the Comptroller's office and others, if it is going to make a true presentation of cost-benefit ratio, needs to broaden a reference to include other considerations than the constraint in the original TVA proposal. That, I think, would better inform your committee.

We intentionally, not ignored, but made small reference to the snail darter issue or other issues which we believe are out of our prerogative. There is one other element we have included, because we saw it as having major social and economic potential, and that was the development of the archeological and historical characteristics of the site which could be retained only if the site is not impounded. They are considerable, in our estimation, and the demonstration of how considerable would be found, if you would please, on pages 33 and 34.

There are two maps. Page 33, with color codes, indicates the number of very significant archeological and historical sites. If you turn the page, only those on the second page would remain if impoundment incurred.

We see the possibility of developing a set of activities which would attract both tourism and, of course, recreation and public education to this site with some significant gains in the overall cost-benefit picture of the project.

A second category which we included, which was not included originally, was that of the potential for research and development. Our investigations found out, working with various scientists in Oak Ridge, TVA, and other places, that because the site has been so extensively disturbed, it presents a unique opportunity to do critical research work and demonstration work in the recovery properties of river bed systems, and we have found, through the Department of Interior and other places, that there is no other site under Federal control at this time which would give the same set of conditions for this investigation. We feel that it could be tied to the new mandate that has been given TVA by President Carter, which expands its role and makes it more nationally significant as a research and demonstration place.

Mr. LEGGETT. On the historical site page, what are the dimensions of the lake there?

Mr. HANSON. The lake, itself, would be approximately 33 miles long. Impoundment on that lake, I believe, is 16,500 acres plus 2,900 acres for flood control.

Mr. LEGGETT. How many acre-feet of water for impoundment?

Mr. HANSON. The surface acreage is that of 16,500. The total project area is 38,000 acres.

Mr. LEGGETT. You don't know the impoundment?

Mr. HANSON. No; I do not. I have it, but I don't have it in front of me.

Mr. LEGGETT. Is it a million acre-feet?

Mr. HANSON. I am sorry. I don't want to give it to you because I don't remember accurately. It is in the report, both the comptroller's report and the TVA proposal. The environmental impact studies also indicate that. I think it is volume 2.

If you wish me to continue and conclude, I would like to say we found the project area which we had to become familiar with, because I was new to the region, myself, having just arrived from Chicago. We found that the project area was a very important acreage, a very valuable natural resource and a very potential economic and social resource.

We support the notion of continued development in the valley area, but we cannot support for economic and social reasons the

impoundment proposal. It doesn't seem to add to its larger benefit, from the investigations we have made, as some of the alternatives that we explored.

Mr. LEGGETT. How can you draw that conclusion if you have made no cost-benefit analyses?

Mr. HANSON. I can give a simple example. The only use that would be precluded by not impounding it would be the energy potential gain which has been estimated at about \$3 million annually. That would take out, however, the impoundment, the agricultural component, which, in itself, is far in excess of that and approaches closer to \$8 million, by TVA figures. All other uses proposed, residential, recreation and others, can be continued today with or without impoundment.

Mr. LEGGETT. That is very interesting, but the thing is how do you draw your conclusions on your alternatives unless you do a cost benefit analysis?

Mr. HANSON. Cost-benefit analysis is a technique of comparing the investment to the return, and this is one of the points that we would like to conclude with, as well. It cannot be done on a cost accounting basis. We know that dollars have been spent, and they are public dollars that have been spent. The question is at this time in current economic conditions and trends, is the continuance of the project as originally proposed back in 1968 the best return on investment, and from our investigations we have determined that it probably is not.

Mr. LEGGETT. You have done a very careful investigation and come up with some raw general conclusions, but you totally ignore the numbers to support those alternatives because you say that is not within the field of your expertise?

Mr. HANSON. I didn't say that, sir. I gave you an example which said all uses proposed could be continued with the exception of energy. The impoundment assumes no agricultural products, the dry dam assumes no energy—

Mr. LEGGETT. A reasonable way to do it would be to go ahead and list all of the values and costs that are associated with the alternative A, and then alternative B, and C, and so on.

Mr. HANSON. I understand what you are saying.

Mr. LEGGETT. Then what we have is 58 pages of subjective analysis which is very interesting, and it may well be what my staff requested of you. However, I am not positive that our mission is to figure out the cost-benefit relationships of various alternatives currently before this subcommittee. I am unable to draw any conclusions from all of this.

Mr. HANSON. The assumption was that the committee was interested in maximizing the public investment.

Mr. LEGGETT. How do you do that without numbers?

Mr. HANSON. You cannot do it without making a comparative analysis.

Mr. LEGGETT. How much would that cost?

Mr. HANSON. I would say that would be done by the General Accounting Office, and you would have to address that question to them. They have the history, and to duplicate the amount of data they have would be very costly.

Mr. LEGGETT. They did a study, but they did not do the number study, either, because apparently the guidance we gave them again was not very clear. So both the university and General Accounting Office, spent a lot of money, but we don't have any information at all that would lead people to draw reasonable conclusions as to the pluses and minuses of the various alternatives.

Mr. HANSON. I would suggest that Chairman Freeman of the TVA has sufficient information within the TVA enterprise to do that, and I trust he could provide that information to you.

Mr. LEGGETT. Perhaps it will be necessary to bring Mr. Freeman over here and get his views. First we should have him study your book, the GAO report, his own archives, and then give us some of his viewpoints.

Mr. HANSON. But to do a proper job, sir, I hope you understand it would take an extensive amount of activity to collect data that exists in other agencies. I think it would be duplication and probably not good investment of your time or money.

Mr. LEGGETT. Mr. Forsythe?

Mr. Forsythe. As a reasonable person, I think this report does provide us with a lot of help, because the only variable in the various alternatives is the relative value of the electric versus agricultural. Those numbers by TVA's own records show that there is anywhere from \$3 million all the way up to \$24 million input in that agricultural category. Then considering whatever benefits we have from the historical component, the old cost benefit ratio has been shown to contain significant variables.

Mr. HANSON. I believe you are right.

Mr. FORSYTHE. I would go on to one other thing. I understand that this agricultural land is not land that is in productive use?

Mr. HANSON. It is not today because it has been clearcut and scalped, but the land is productive. It is class 1 and 2, primarily. There is some class 3 land, and the acreage probably has increased because of the preparation of the site.

Mr. FORSYTHE. So it is land that has a potential productive capacity.

Mr. HANSON. It has a historical productive capacity which was the basis of the original estimate given by TVA. It was in agricultural production at the time the land was acquired.

Mr. FORSYTHE. What type of agriculture?

Mr. HANSON. Double rotation, grain crops, a whole range of forest activity in the specific region, but there is a wide range, vegetables—

Mr. FORSYTHE. But it has largely been used in a land bank and was out of production?

Mr. HANSON. No, only 160 acres was in land bank out of the total at the time of acquisition.

The other thing that should be brought to mind is that the energy option does not necessarily involve significant gain in employment opportunity because those facilities are in existence and are being manned, whereas the agricultural option, if exercised, would involve a great deal of opportunity for employment more characteristic to the skills of that region, and I think that is an important distinction.

Mr. FORSYTHE. Could we go back to the energy component? You say it would not enhance employment. This is not energy now available, would it not add to the employment potential of the area?

Mr. HANSON. It would be running it through a set of generators that exist and have existed for some time. You are simply upping their capacity.

Mr. FORSYTHE. It would not create employment within the area served by the energy generation operation?

Mr. HANSON. No.

Mr. FORSYTHE. That is what you are referring to?

Mr. HANSON. Right.

Mr. FORSYTHE. But the additional energy available would certainly, if it is of any significance, be used somewhere in some way that would either increase residential capacity to use the area or allow increased industrial use of energy?

Mr. HANSON. That is correct. The use of that energy does, of course—

Mr. FORSYTHE. That is where the potential would be?

Mr. HANSON. Yes, it does amount to 0.08 percent, less than 1 percent of the total TVA capacity, but it is significant in terms of dollars. The estimated value annually could be \$3 million today.

Mr. FORSYTHE. Isn't it also true that the increased electrical output would help in a peak output situation? The need for impoundment is to maintain level production rather than having periods of low water which means Fort Loudon cannot operate at maximum capacity?

Mr. HANSON. What this does is provide a reserve, that is right, so it can yield design limits within the existing generating facilities.

Mr. FORSYTHE. But your investigation says that that can be done by smaller dams on tributaries to maintain river flow?

Mr. HANSON. No; we have not said the smaller dams would generate electricity. We said that the smaller dams could be used as smaller impoundments around which very nice residential development could occur.

Mr. FORSYTHE. That would not affect the question of providing higher river flow in slow periods for the main power dam.

Mr. HANSON. It would not be an adequate supplement.

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. Mr. Hughes?

Mr. HUGHES. No questions.

Mr. LEGGETT. Mr. Oberstar?

Mr. OBERSTAR. No questions, Mr. Chairman.

Mr. HANSON. Thank you, Mr. Chairman.

Mr. LEGGETT. Thank you very much.

We will put your study to adequate use.

Next, we have Dan Poole of the Wildlife Management Institute. Dan, it is nice to have you back before the subcommittee.

STATEMENT OF DAN POOLE, PRESIDENT, WILDLIFE MANAGEMENT INSTITUTE

Mr. POOLE. Thank you, Mr. Chairman. I will be quite brief.
Mr. LEGGETT. You favor the amendment to this act..

Mr. POOLE. We are hopeful that the committee will conclude from its investigation that section 7 of the Endangered Species Act be permitted to stand. The fact that the act is working is borne out by the yelps of frustration that are being heard.

Of course, its purpose was not to assure bureaucratic tranquility, but rather to force sharper and broader examination of project effects and enable the various agencies to do an even better job of what it is they do in serving the total interest of the American public.

Congressional insistence that section 7 stand would be of considerable help in removing the lingering doubts of those few agencies that appear to believe that good-faith consultation is a responsibility of someone else.

If, however, the committee decides, from its judgment of the political climate, that some action is warranted, we suggest that it consider an alternative no more weakening than that recommended by the Senate Environment and Public Works Committee. By giving an agency one more level of appeal, the Senate plan may encourage Federal agencies to be a bit less willing to consult in good faith—at least until the agencies test the mettle of the new group—which for some would mean no significant change, and it also may be more costly and cause some more delay. But only experience would show that.

For the record, Mr. Chairman, I have appended a copy of an earlier institute letter on this subject to the chairman of the cognizant Senate subcommittee. You will note our recommendations to that group concerning authority of members of the proposed Endangered Species Interagency Committee to appoint representatives, membership on the committee of the State fish and wildlife agency, evaluation of benefits or losses in other than purely economic terms, and payment of mitigation, operation and maintenance costs.

A final point, Mr. Chairman: As the members and staff of this committee are well aware, State fish and wildlife agencies, the U.S. Fish and Wildlife Service, and interested conservation groups long have recommended amendment of the Fish and Wildlife Coordination Act of 1958 as a positive step toward lessening confrontation between fish and wildlife interests and developmental interests at water resources projects. This committee and others have held hearings on the subject. The necessity for such an amendment is well documented in GAO and other reports.

Amazingly, the Department of the Interior to this time has issued no regulations to implement the Fish and Wildlife Coordination Act, as inadequate as it is. In his recent water policy message, the President directed the Secretary of the Interior and other agency heads to, "require full implementation of and agency compliance with the Fish and Wildlife Coordination Act * * *." Unfortunately, the President did not call for legislation to improve the Fish and Wildlife Coordination Act even though the act's deficiencies are well documented. A bill that seeks to overcome these weaknesses is H.R. 8161, by Congressman Oberstar, a member of this committee, and who is here this morning.

I am told the reason why a call for legislation on the part of the President with regard to the Fish and Wildlife Coordination Act

did not get in the message was because of some kind of communication goof-up within the White House area.

Mr. Oberstar's bill would assist considerably in reducing confrontations between fish and wildlife and water development interests. As it now stands—and this is a critical point—Federal and State fish and wildlife agencies are brought into the process for a proposed water development after siting decisions are made by the construction agency and after local and other development interests are committed to the project. In essence, H.R. 8161 would require that the engineers and the biologists be in the field together, before key decisions and commitments are made. This will assure adequate biological reconnaissance and evaluation of potential project sites, so that fish and wildlife species, including any that are known to be threatened or endangered, may be identified. This approach, in time—only in time—will reduce the problems of after-the-fact discoveries that currently disturb water project promoters and fish and wildlife interests alike.

Another enactment that will be of significant assistance will be H.R. 10255, the Nongame Fish and Wildlife Act, already reported favorably by this committee. Its requirement for comprehensive fish and wildlife planning will be helpful in identifying potential problem areas, and thereby assist in reducing water project siting confrontations.

I thank you.

[The attachment to Mr. Poole's statement follows:]

WILDLIFE MANAGEMENT INSTITUTE,
April 27, 1978.

HON. JOHN C. CULVER,
*Chairman, Subcommittee on Resource Protection,
Committee on Environment and Public Works, Washington, D.C.*

DEAR SENATOR CULVER: We have studied very carefully S. 2899 which you and several of your colleagues introduced April 12. We find no fault with the intent of that bill, but, the problem it seeks to solve is a tough one and we are not certain that S. 2899, as written, would provide the relief desired.

Early in the current debate over the Endangered and Threatened Species Act, which was sparked by the Tellico-snail darter controversy and several others, the Institute opposed any change in the protective mechanism of section 7. We reasoned that the section was working well since the Secretary of Interior said that only one of more than 4,500 consultations proved unresolvable by the administrative process. It seemed appropriate that Congress should make the final decision of whether to proceed with a project that may eliminate an endangered population or species, especially since such decisions apparently would be forced only on rare occasions.

Obviously Congress is not willing to make such a decision. And you gave a convincing argument in your introductory remarks to S. 2899 that such occasions may not be rare and that Congress should not make the decisions. But something must be done. Controversies such as over Tellico are beginning to hurt all of this nation's fish and wildlife resources. Many people view the problem as a few minnows foundering a public works project with many millions of dollars already committed. The situation is eroding much-needed support in Congress and among segments of the public. Should this continue, the resource loss may be much greater than the recently discovered snail darter. Some kind of action short of sacrificing the darter is required, in our opinion.

The proposal in S. 2899 of an Endangered Species Interagency Committee to make final decisions on whether public works projects should be initiated or continued when in conflict with endangered species could be a workable alternative to Congress performing that task. In fact, it could be better, if adequate mitigation measures to minimize the impacts are guaranteed.

We would, however, raise some questions and make a few suggestions to improve S. 2899.

The most obvious problem to us is that the state wildlife agencies which have management responsibilities under the Endangered and Threatened Species Act are not included on the proposed Committee. Experience with the Endangered Species Scientific Authority, a similar committee which was created subsequent to the International Trade in Endangered Species of Wild Fauna and Flora Treaty, has proven without doubt that the states must be involved in any groups that makes such far-reaching decisions on fish and wildlife for which the states share responsibilities.

We also are concerned that the proposed Committee would consist primarily of Cabinet-level individuals. There does not appear to be flexibility for the members to delegate responsibility for serving on the Committee. If that is true, any vote by the Committee would require almost a Cabinet meeting. We wonder if that is the best way or if the members should be authorized to designate someone within their various departments and agencies to represent them.

On page 10 of the bill, the Committee is given criteria for granting exemptions to section 7 of the 1973 Act. One of those criteria is that "the benefits of such action clearly outweigh the benefits of conserving the species or its critical habitat and that such action is in the public interest." We suggest that language be considered to clarify that the benefits of the action and of conserving the species or habitat should not be limited to dollars. Wildlife, a public good, cannot be valued adequately at this time in terms of dollars and cents. Except for limited commercial use, it is not bought or sold and thus there is no market value.

Under the mitigation subsection, the federal construction agency receiving an exemption from the Committee is required only to transfer funds to the Fish and Wildlife Service for implementing the mitigation program. It is not clear whether the construction agency would be required to provide operation and maintenance funds to sustain the program. We recommend that language be included to direct that such O & M funds, if needed, be provided by the construction agency. And secondly, mitigation should be required to proceed apace with project planning and construction.

The Institute appreciates the opportunity to present these views on S. 2899.
Sincerely,

DANIEL A. POOLE,
President.

Mr. LEGGETT. Thank you very much, Dan, for the helpful statement. I was looking at your letter to Mr. Culver, where you believe the exception process as opted for by the Senate considering the high level of appointees is not a very practical resolution of any conflicts we might have here.

Mr. Forsythe?

Mr. Forsythe. Thank you, Mr. Chairman.

Dan, two matters are of interest to me in this regard. If the EIS process was really effective, as it will be under the proposed new CEQ regs, I believe a lot of the interagency conflict would be resolved.

Have you had an opportunity to see the new CEQ regs?

Mr. POOLE. No.

Mr. FORSYTHE. I think they are very good particularly insofar as environmental review and consultation requirements are concerned. They also bring in the Fisheries Coordination Act specifically. Let me read it.

To the fullest extent possible, agencies shall prepare their draft EIS statement concurrently with and integrated with environmental impact analysis and related surveys and studies required by the Fish and Wildlife Coordination Act, National Historic Preservation Act and the Endangered Species Act and other environment review items.

This is the kind of coordination that has, I think, been lacking where we have run into the endangered species problem. Would you agree?

Mr. POOLE. Yes, but we worked many, many years to improve these coordinating mechanisms, and, you know, the latest one that comes along is the most popular, and then we find in time it has broken down for a number of reasons. Usually the reasons are quite simple. The agency most affected doesn't want to go along, and we have always lacked someone with the clout or someone willing to apply the clout to get these agencies together and make them perform.

Mr. FORSYTHE. This is the reason why I have viewed CEQ as a very important agency and one that should be in the President's office to provide the clout needed to bring about that coordination. I think it is tragic that they have not had regulations until this point in time. They have operated on the basis of guidelines. We have had 70 different ways for the 70 agencies all presuming to meet this problem of environmental concern. Unfortunately, some agencies even today really are not believers in terms of effectively reviewing and considering the environmental concerns as they move forward.

Mr. POOLE. Mr. Forsythe, in some ways and for a variety of reasons, CEQ has fallen considerably below our expectations for it.

Mr. FORSYTHE. I can fully agree, and hopefully we can restore its vigor. Unless there is going to be that White House clout involved here, we are not going to get agencies to cooperate in this field. It seems to me that is the essential role of CEQ.

Mr. POOLE. In this present case, our endorsement, such as it is, of the Senate approach really rests more on the judgment of you gentlemen, and the temper here in Congress. It comes into play only in our feeling that we would rather not win the battle and lose the war.

If some kind of alternative accommodation must be accepted, rather than losing the whole thing, then we would go for the accommodation. But that judgment is yours.

Mr. FORSYTHE. I would agree with you thoroughly in that. I do have the feeling that if we were to go to the floor with the bill in the present form, we could lose it.

Mr. POOLE. Or what happened Monday with the Nongame Act, as I understand it, really stems from this issue more than it did the content of the Nongame Act.

Mr. FORSYTHE. Apparently.

Mr. LEGGETT. It also stems from California, too. Originally we had programed that Nongame Act to be self-funding. Now we have to drop that provision because of problems with that, and, of course, then we are left with a big expenditure. So some folks think we should make those expenditures under legislation that is amendable.

Mr. POOLE. We still heartily endorse the self-funding approach.

Mr. LEGGETT. Please, get us the votes.

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. Mr. Hughes?

Mr. HUGHES. Thank you, Mr. Chairman. I gather from your testimony that you feel that there shouldn't be any modification of section 7 of the Endangered Species Act, and if there has to be any modification, then you feel that the Senate approach would be perhaps more acceptable than other approaches. But you are not

really happy about the Senate approach. Does that sum up your views?

Mr. POOLE. Yes; I haven't seen or read any other approaches or alternatives than that which the Senate has proposed. I agree completely with Dr. Taylor in her comments this morning—let's get some time and experience under our belt with section 7 before we tinker with it.

Mr. HUGHES. I am interested in your suggestion that perhaps if we had another appeal agency that the various agencies having jurisdiction might not be inclined to deal in good faith.

Mr. POOLE. No, actually what I didn't read, part of it was in there; I think they may not be inclined to consult in the first go-around with the U.S. Fish and Wildlife Service, that some possibly may think that in having an alternative group to turn to, sort of a court of last resort, that they would turn to them.

But really we cannot see how that will work, because we don't know what the attitudes of that interagency committee might be, how they will discharge their duties. The agencies, that might feel compelled to resort to this alternative certainly are going to watch the decisions of that interagency group and more or less test the water.

Mr. HUGHES. Mr. Poole, you know our whole system is based upon an appeals structure. From my own personal experience I have found that just the converse is true; that quite often agencies will be more inclined to bargain in good faith and try to strike reasonable compromises for fear that if they do not, an appeal tribunal may give one of the parties everything they want or would otherwise be worse off.

Mr. POOLE. The Senate report gives considerable latitude to the Interagency Committee to go considerably beyond the points in contention.

Mr. HUGHES. Yes, but my point is that it has been my personal experience that it is the reverse of what you suggested, that when parties are dealing with one another in trying to achieve compromises, they are more inclined not to be as blind to the other factors if they realize that on appeal they may lose what they have even gained.

Mr. POOLE. Mr. Hughes, I haven't had the benefit of that experience that you have had in that regard. Our reactions stem from a quarter century or more of dealing particularly with the water resources construction agencies. The fish and wildlife interests have not made out well.

Mr. HUGHES. You know, I realize this is not totally within your jurisdiction, but I am in the process now of trying to set up a meeting with Fish and Wildlife representatives dealing with dredging problems that I really shouldn't have to spend my time with, but because the agency and the personnel that we are dealing with has taken a very hard stand with regard to dredging and dredge spoils, it becomes necessary for my office to intercede. I find often when I can get some of the midlevel people to look at the situation that, in fact, they will try to achieve the compromises that are needed.

Perhaps that is one of the problems that we have had in the enforcement of the Endangered Species Act, and why we are here

today. We must have balance. I frankly think that we take a chance of losing the gains we have made when we don't have reasonable enforcement and implementation of our acts.

Mr. LEGGETT. The subcommittee will suspend for a few minutes while we go answer the rollcall. This is the neutron bomb banning, the amendment of Mr. Weiss on this bill. We will have Mr. Oberstar ask questions of you when we return. Then we are going to include the statements of the panel, and then we can go ahead and talk about whatever issues remain.

[Brief recess to vote.]

Mr. LEGGETT. The meeting will come back to order.

As has been previously indicated by the Chair, we intend to finish this morning.

Mr. Oberstar, you are recognized.

Mr. OBERSTAR. Thank you, Mr. Chairman.

I hope, again, that you are right, that it was only an oversight that the President did not recommend legislation to improve the Fish and Wildlife Coordination Act. Or perhaps the recommendation was caught up in some internal White House bureaucracy.

I believe he certainly should have made that recommendation. The bland statement directing agency heads to fully implement the Fish and Wildlife Coordination Act is going to have about as much effect in improving fish and wildlife coordination as a drop of distilled water would have in cleaning up the Potomac.

It is going to take an awful lot of shoulders to the wheel to get those bureaucracies to take some action. They have not done it so far, and they are not likely to do so unless the President gets out there and steps on toes and kicks shins.

I believe it is going to take legislation of the kind that we have drafted. I am happy that our committee will hold hearings on this subject in the very near future, before the end of July.

Mr. LEGGETT. That is a commitment.

Mr. OBERSTAR. I would like to ask if the Tellico confrontation—

Mr. LEGGETT. This witness has not really testified on Tellico, you understand.

Mr. OBERSTAR. Right. But there was the Supreme Court decision on Tellico yesterday. I would like to know if the Tellico confrontation could have been avoided. Would a combination of satisfaction of the Fish and Wildlife Coordination Act, early consultation, and early mitigation action of the type contemplated in our amendments have prevented this conflict before site selection had been made?

What is your honest evaluation of that?

Mr. POOLE. Well, as the Fish and Wildlife Coordination Act exists today, TVA is excluded from it, as is the Soil Conservation Service. So, the act today would have and did have, of course, no effect upon the current situation.

Your amendment to the act would bring TVA and the SCS and possibly others that I cannot recall at the moment in under the cloak of the act. I think again, if we could get this level of administration and cooperation which we all seem to hold to be desirable, I believe that in the future it would greatly lessen these sharp confrontations.

Mr. OBERSTAR. What is your reaction to the statement that most conflicts occur on projects initiated before enactment of the Endangered Species Act?

Mr. POOLE. In the current situation, I am not familiar with it in any great detail, except that there is a considerable backlog of authorized projects, and it will be some time—even with those that are funded, before that backlog is reduced.

Mr. OBERSTAR. Do you feel that the additional level of review proposed by the Senate might help expedite action on those projects?

Mr. POOLE. Well, this again is just a personal philosophy. I would hope that most of the projects in the backlog never would be constructed. Somewhere along the line we are going to have to address directly the backlog itself, how the Endangered Species Act applies.

The Supreme Court's opinion yesterday apparently is the final word on that in the current situation. But how the Fish and Wildlife Coordination Act amendment would apply to projects that have already been authorized I think should be addressed squarely.

Mr. OBERSTAR. Well, it is certainly better from a public policy standpoint to address these issues before any Federal or local funds are laid out, before a project is initiated.

It is an inexcusable waste when such investments have been made and you then have to stop a project. We need to complete planning, coordination, advanced study, and determination of the existence of endangered species before we expend funds to construct projects.

Mr. POOLE. That is right.

Mr. OBERSTAR. If we can do this we will do the public a great service.

Mr. POOLE. Yes, sir.

Mr. OBERSTAR. Thank you very much, Dan.

Mr. LEGGETT. Did you say that you hoped the backlog of water projects was never constructed?

Mr. POOLE. I hope a good share of the authorized projects are not constructed in the absence of rigorous examination of their economic and environmental effects.

Mr. LEGGETT. You are just against water projects?

Mr. POOLE. Not at all. When they meet all the requirements of the tests, economically, and give consideration to the other values, and benefits that are involved—

Mr. LEGGETT. Any of them that meet all of the Fish and Wildlife Coordination Act requirements you would support.

Mr. POOLE. That would be one of the criteria, yes.

Mr. LEGGETT. Thank you very much, Dan. That is very helpful.

Next we will have our panel of Michael Bean of EDF; Lou Regenstein, Fund for Animals, and Craig Van Note of Monitor.

**PANEL OF MICHAEL BEAN, ENVIRONMENTAL DEFENSE FUND;
LOU REGENSTEIN, EXECUTIVE VICE PRESIDENT, FUND FOR
ANIMALS; AND CRAIG VAN NOTE, EXECUTIVE VICE PRESIDENT,
MONITOR, INC.**

Mr. LEGGETT. I have read all of your statements. All of your statements will appear in the record at this point.

[The information follows:]

STATEMENT OF THE FUND FOR ANIMALS

Mr. Chairman and members of the Committee: I appreciate the opportunity to appear before this Committee to testify on the proposed legislation to amend and weaken the Endangered Species Act.

On behalf of the 130,000 members of the Fund across this country, we strongly oppose changing the Act at this time. It is clear that those who advocate changing the law have not made the case that this would be necessary or desirable.

The attempt now underway to gut and cripple the Endangered Species Act will place in jeopardy the future survival of countless rare and endangered species, including the whooping crane, grizzly bear, California sea otter, Mississippi sandhill crane, northern Rocky Mountain timber wolf, Florida sea cow (manatee), spotted owl, Bachmann's warbler, Asian elephant, and many other types of imperiled wildlife, even including whales and dolphins. (A specific account of how these species will be potentially or immediately threatened will be submitted for the record.)

The amendments to the Endangered Species Act, including those introduced by Senators Howard Baker (R-Tenn.) and John Culver (D-Iowa), would seriously weaken Section 7 and cut the heart out of the Act. Section 7 prohibits agencies of the U.S. government from taking actions which would wipe out endangered species and from funding or authorizing projects which would destroy habitat critical to their survival. Under these amendments, a process would be set up, including a committee, through which the U.S. government could be allowed to wipe out any species, under certain circumstances, that gets in the way of federal projects, such as highways, dams, or stream channelization programs.

This attempt to gut the Act has been strongly pushed by the vested interest groups who have been destroying wildlife without interference for so many years: the power and utility companies, the dam builders, the polluters, the timber companies, and the pork barreling federal bureaucracies, such as the U.S. Army Corps of Engineers, that spend billions of dollars of our tax money each year on wasteful, inflationary and environmentally devastating projects.

These groups would have us believe that only obscure "unimportant" species would be affected by this amendment, such as the snail darter, a three-inch long minnow that is threatened by the Tellico Dam being built in Tennessee by the Tennessee Valley Authority (TVA). (We think all species—including snail darters—are important links in the chain of life and are essential if nature's delicate balance and the earth's life support systems are to remain intact.) But the truth is that not just obscure plants and animals are involved here, but virtually all endangered wildlife whose habitat is potentially threatened by government boondoggles.

Moreover, not even the pork barrel lobby has been able to make a valid case that the Act is inflexible and needs changing to allow such projects to go forth. According to the U.S. Department of the Interior, of the approximately 5,200 conflicts that have arisen between federal projects and endangered species under the Act, all but one have been resolved, usually administratively, through negotiation, modification, or compromise. For example, a lawsuit by conservationists forced the Federal Highway Administration to re-route an interstate highway around, instead of through, the last refuge for the 40 or so Mississippi sandhill cranes remaining in the wild. As a result, and because of the Endangered Species Act, we now have both a highway and sandhill cranes in Mississippi. The one exception has been the TVA's Tellico Dam, a situation in which the TVA adamantly refused to consult with the Interior Department as required by the Act and negotiate a compromise that would not destroy and the snail darter. Clearly, it is premature and unnecessary to amend the Act now when there is no compelling reason to do so.

Mr. Chairman, we want to see our precious wildlife heritage preserved for future generations so that our children can see what a bear or crane looks like as well as a highway. The decisions Congress is now making on amending the Act could well determine whether much of our wildlife survives or disappears forever into extinction. We therefore urge that the Act not be amended at this time.

Thank you again for the opportunity to express our views before this Committee.

STATEMENT OF CRAIG VAN NOTE, EXECUTIVE VICE PRESIDENT, MONITOR

Mr. Chairman, I am Craig Van Note, executive vice president of the Monitor consortium of conservation, environmental and animal welfare organizations. Today I am testifying on behalf of Rare Animal Relief Effort, The Humane Society of the

United States, The International Fund for Animal Welfare, the Committee for the Protection of the Tule Elk, Let Live, and the American Cetacean Society.

We commend you, Mr. Chairman, for holding this series of oversight hearings on the Endangered Species Act. The Act has become a great public issue in recent months and these hearings will hopefully clarify the intent of this landmark legislation and help resolve the controversies surrounding it.

The Act has come under strong attack by special interests who have spread a cloud of misinformation about the purposes and effects of it. It was encouraging that yesterday the Supreme Court upheld the provisions and administration of the Endangered Species Act when it ruled against the Tennessee Valley Authority in the Tellico Dam case. We hope that the Congress will likewise find that the Act provides for fair and judicious resolution of conflicts between federal projects and endangered species or their habitat.

This 1973 law was passed overwhelmingly by the Congress because the diversity of life in our nation—indeed, the entire planet—is now imperiled by the actions of mankind. We have the power, of course, to destroy all life through nuclear bombs and radiation. But it is far more likely that life on Earth will decline gradually and insidiously by the bulldozer, the dredger, the chain saw and toxic chemicals in the environment. Habitat—the ecosystem upon which all life forms are dependent—is being destroyed at an alarming rate.

Supreme Court Chief Justice Warren Burger clearly described the noble intent of the Endangered Species Act in his opinion yesterday: "Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities."

The extermination of species has been growing at a geometric rate in recent decades. If the trend continues, most species of mammals will likely disappear from the wild within the next century. The destruction of these species will be accompanied by the disappearance of uncouneted thousands of species of plants and other animals. What these extinctions will mean is that the life-support system has broken down.

The consequences for mankind of the breakdown of ecosystems is now only dimly perceived. But many scientists warn that man's own future will be in doubt if the relentless destruction of species and their habitats continues. Each year, we learn more about the complex interdependence of all life forms, including man.

In many aspects, the United States is well off ecologically in relation to other parts of the world. In many underdeveloped countries, richly productive land and tropical jungles are being turned into desert wastelands unfit for humans or other creatures. This horrifying spectacle of deforestation and desertification is the consequence of unthinking development and/or exploitation of the land.

When the Congress passed the Endangered Species Act of 1973, it set an example for the rest of the world to follow. It was a demonstration that something could be done to slow down or stop the devastation of the natural world.

The United States' leadership has resulted in endangered species acts being adopted by more than 40 nations. The peoples of the world continue to look to America for leadership in conservation. It would be a tragedy of perhaps fatal consequences if the United States abandoned strong environmental protection to the pressures of special interests.

The conservation community already views much of the world as an ecological time bomb. If the richest and most environmentally-aware nation in the world is unwilling to protect its own endangered species through stringent laws, then we will have lost our credibility with those underdeveloped countries that most need our help.

The Senate is now considering an amendment to the Act that would signal an end to the United States' commitment to strong protection of our endangered species. By establishing a special review committee on top of the present consultation process required under section 7 of the Act, the amendment would turn dozens of resolvable conflicts between projects and endangered species into the "irresolvable conflicts" to be decided by the review committee.

Such a review committee, made up largely of political appointees, would inject the political and economic considerations of the special interests into the decisionmaking process. The present process, both practical and enforceable, would be pushed aside. The fundamental principle of the Act would not be biological survival, but rather political influence.

The special review committee would not only have the power to sign the death warrants for such innocuous species as the snail darter or the furbish lousewart, but any animal or plant threatened by a federal project. Let me cite a few major species of mammals that could be written off by a review committee in impending conflicts.

One is the bowhead whale, a species already highly endangered after a century of devastating whaling.

The bowhead population is estimated to be less than 2,000 and under 10 percent of original stock size. Each summer this species migrates north through the Bering Sea to the Arctic Ocean and the Beaufort Sea. It spends the summer feeding in the rich waters there. The Beaufort Sea is adjacent to the huge Prudhoe Bay oil field. Scientists agree that the Beaufort Sea is critical habitat for the bowhead whale. Careless drilling in those ice-ridden waters could result in an oil spill of disastrous magnitude for the whole Beaufort Sea ecosystem.

Given the enormous power and influence of the oil industry, there is little doubt that a conflict between offshore oil leasing and the endangered bowhead whale would rapidly be declared "irresolvable" and be thrown to the review committee for political resolution. Could a committee of political appointees withstand the multi-billion dollar pressures of the oil interests? That is doubtful.

The same fate could befall the California gray whale in its summering waters off Alaska or in the sheltering lagoons of Baja California where this endangered species goes each winter to calve and mate. Oil lies under both these areas.

In Florida, there is the endangered manatee, a marine mammal that is in sharp decline from dredging, pollution, boating and other degradations of its habitat. The manatee is a good illustration of the importance of the Endangered Species Act as an indicator of the health of entire ecosystems.

The manatee's habitat is the estuaries along the Florida coast. By protecting the manatee under provisions of the Act, we are also saving the rich estuarine waters that provide food and shelter for dozens of species of fish, shellfish and birds as well as mammals. Indeed, it is fair to say that the abundant marine life of the Gulf area, stretching from Florida to Texas, is dependent upon the coastal estuaries for existence.

The forests of mangrove trees filling the coastal estuaries of the Gulf provide the basic nutrients to sustain virtually every commercially important fish and shellfish. In addition, the mangrove trees provide habitat for these species.

Some of the fish species dependent upon these estuaries are the spotted sea trout, red drum, black and silver mullet, menhaden, croaker, and perhaps 90 percent of all game fish in the Gulf and on the Southeast coast. These fish spawn at sea, and their young swim into the estuaries, which serve as nurseries.

Two weeks ago, you heard testimony condemning the Act from Mr. Charles Lyles, executive director of the Gulf States Marine Fisheries Commission. He said he was representing most of the fishermen and shrimpers in the Southeast United States. His attack on the Act was appallingly misinformed.

Mr. Lyles claimed that the Act "attempts to legislate against natural selection." "When changes occur, whether they are natural or manmade, there will be a change in animal population." "Only those capable of surviving should survive."

He went on to say that "this law protects some animal that has no value in the biological chain and no economic importance to man."

These statements of Mr. Lyles exhibit not only a remarkable arrogance about life, but a blind ignorance of the marine ecosystem. No doubt Mr. Lyles would approve of the extermination of the manatee by dredging and filling the mangrove estuaries of Florida to build harbors, marinas, housing developments, phosphate mines, power plants and all the other symbols of material progress. After all, this homely marine mammal has no economic or biological value according to Mr. Lyles' philosophy.

But when the manatees were gone, it is likely that Mr. Lyles' job would disappear, as well as the livelihoods of tens of thousands of Southeast fishermen. The catch of fish and crabs and shrimp would sharply decline.

Mr. Lyles spoke at length about the shrimp industry. I should point out that at this very moment, all along the estuarine areas of south Florida, millions of young shrimp are swimming in from the sea to spend the next few months growing in the rich waters. Later this year, the shrimp fleets will harvest these shrimp on the Tortugas grounds.

By protecting the manatee and its habitat in Florida, we are ensuring that a vast marine ecosystem survives. The viability of one of the largest commercial fisheries in the world is tied to the survival of the manatee.

Mr. Chairman, the Endangered Species Act is only as effective as the level of support authorized by the Congress. As the endangerment of life on our planet grows each year, the need for increased funding is evident. We strongly support substantial increases in the budgets of the Interior, Commerce and Agriculture departments to enable them to effectively protect endangered species.

The Committee should be alerted to a serious lapse in enforcement of the Act. Section 3(10) of the Act places responsibility for enforcement of provisions regulat-

ing the importation and exportation of plants listed under the Act or the Convention on International Trade in Endangered Species of Wild Fauna and Flora on the Secretary of Agriculture. The Secretary has delegated this responsibility to the Animal and Plant Health Inspection Service (APHIS). In brief, the Act requires APHIS to inspect incoming and outgoing shipments to determine whether they contain plants so listed and, if so, whether they are accompanied by proper permits. Shipments without required permits should be seized and enforcement actions taken.

Unfortunately, APHIS has never received a separate authorization for implementing the Endangered Species Act. Citing budgetary limitations, APHIS has, until a month ago, refused to take any enforcement action other than to collect permits at ports and notify shippers informally if their shipments require permits. Despite evidence of widespread flouting of permit requirements and smuggling of plants in which trade is forbidden, APHIS had not seized a single shipment until last month. In that case, some 150 highly endangered cycads exported illegally from South Africa were seized, but were then released due to division within the Agriculture Department over whether to prosecute the case.

There is growing concern within the environmental community over the impact of Agriculture's inaction on the level of protection afforded endangered plants and on U.S. leadership of the conservation movement. The U.S. is also failing to meet its international treaty obligations. Congress should rectify this serious situation by authorizing adequate funding to APHIS to enforce the Endangered Species Act.

Thank you for the opportunity to testify.

Mr. LEGGETT. Most of the statements are short, and most of them do generally support the values in the Endangered Species Act. They point up the harm which would be caused to our society were we to capriciously allow species to be wiped out.

In each of these statements you point out the necessity for maintaining section 7 in its current form. Mr. Van Note you support in your statement funding and specific authorization for plant listing programs.

Now, you can make whatever further statements you may think are necessary.

Mr. BEAN. Mr. Chairman, I believe I will begin. I am Michael Bean, chairman of the wildlife program of the Environmental Defense Fund, and author of the book, "The Evolution of National Wildlife Law."

Yesterday, Mr. Chairman, the Chief Justice of the U. S. Supreme Court said that the Endangered Species Act accords the highest priority to the protection of endangered species.

With all due respect, while I support the Court's conclusion I think that statement was unfortunate because it is potentially misleading.

The Endangered Species Act has been characterized by some as pitting the interests of often obscure species against the interests of human welfare. If that characterization were correct, we should all breathe a sigh of relief, for then the answers to the many problems that vex us today would be quite easy.

We would, as any species would, make the choice that best serves our own interests. Indeed, if there were anything unique about our decision, it would only be that it might be accompanied by a brief feeling of remorse for the fellow creature whose interests were sacrificed.

Unfortunately, however, the characterization I have described is incorrect. Yes; the interests of human welfare are at stake in the various controversies that have arisen under the Endangered Species Act.

They are not, however, pitted against the interests of other species. Rather they are pitted against our own future interests. That in itself does not create any insuperable difficulties because we are by now well accustomed, through the application of appropriate discount rates, to balancing present benefits against future benefits.

However, the future human benefits derived from protecting biological diversity are so uncertain and incapable of quantification as to make any balancing effort meaningless.

Take some examples. Were we, 5 years ago, to have projected the value of protecting the survival of the horseshoe crab, we might well have projected a negative value because this marine invertebrate, which feeds upon commercially valuable shellfish, was then thought to be simply a pest.

Today, with the discovery that the blood of the horseshoe crab can serve as an extraordinarily sensitive detector of the presence of bacterial endotoxins in intravenous fluids, its value must be regarded as immense.

Five years ago, we could not have foreseen any significant value to us in protecting the armadillo. Today we recognize that it may furnish the vehicle for the development of a vaccine against leprosy.

Other similar examples are legion. Still other examples of unexpected, immense human benefit from obscure species will continue to be discovered—as long as those obscure species continue to exist.

In 1973 Congress was aware that it was incapable of striking a rationally defensible balance between the interests that are truly at stake in endangered species conflicts.

It therefore decided to err, if at all, on the side of caution by opting for the choice that preserves future opportunities to realize significant human benefit. Today, the wisdom of that choice has been questioned by some.

But their proclivity to misrepresent the true nature of the interests in conflict only underscores the fact that we are still completely unable to design a defensible balancing mechanism.

That, in turn, in EDF's view, confirms the wisdom of the decision made by Congress in 1973. We urge you to reaffirm it.

Thank you, Mr. Chairman.

Mr. LEGGETT. Thank you.

Do you have anything further to add?

Mr. BEAN. I would only conclude by saying that in 1973 Congress recognized it was incapable of structuring a rationally defensible balancing mechanism that would balance our present interests against our future interests in the protection of endangered species, and decided to err on the side of caution by opting for the choice that would preserve future opportunities for realizing significant human benefits.

Nothing that has occurred thus far under this act suggests that that decision was unwise. Therefore, EDF urges you to reaffirm it this year.

Mr. LEGGETT. Thank you very much.

Do either of the other gentlemen have anything to add to your statements?

STATEMENT OF LOUIS REGENSTEIN, FUND FOR ANIMALS

Mr. REGENSTEIN. Mr. Chairman, I am Louis Regenstein. I am executive vice president of the Fund for Animals. We appreciate the opportunity to appear here today.

On behalf of our 130,000 members across the country, I would like to emphasize our opposition to changing the law at this time. I think it should be emphasized that not just "obscure" species are involved here, but countless rare and endangered species, such as the whooping crane, the grizzly bear, the California sea otter, the Mississippi sandhill crane, even the Asian elephant, which is potentially threatened by the Agency for International Development program in Ceylon, which would destroy part of its habitat.

So, it is very important to realize that a lot of species that the American public is very interested in and holds in high regard are potentially or actually threatened by the amendments that have been introduced.

It is very important also to emphasize that the act is not inflexible, and does not need to be changed to allow projects to go forth.

I am sure this committee has heard over and over again the figure of 4,500 or 5,200 conflicts that have arisen between endangered species and Federal projects, all but one of which were resolved administratively through a negotiation, modification, or compromise.

A good example of how the act really does work is the lawsuit brought by conservationists which forced the Federal Highway Administration to reroute an interstate highway around, instead of through, the last refuge for the 40 or so Mississippi sandhill crane remaining in the wild.

As a result, and because of the Endangered Species Act, we now have both the highway and sandhill cranes in Mississippi.

I would like to point out the economy of the State of Mississippi was not destroyed by this compromise, as we kept hearing over and over again would happen unless the Endangered Species Act were somehow made moot here.

The one exception, of course, is the Tellico Dam, which according to the testimony that this committee has heard on many occasions is a project that probably shouldn't have been built anyway, regardless of whether there was a snail darter involved.

Mr. LEGGETT. Let me ask you this. In that case, did Interior ever try to consult with the TVA people?

Mr. REGENSTEIN. It is my understanding, Mr. Chairman—and I probably am not your best witness on this—that Interior tried repeatedly to consult with TVA, and Aubrey Wagner, the former Chairman of the TVA, who just resigned, was just quoted in the newspaper a few days before his resignation as stating flat out that he was not going to conduct a good faith consultation with the Interior Department on it.

I don't think TVA made any secret of the fact that they were not interested in consulting. So, as you have heard earlier today, there hasn't been a single case of a conflict between an endangered species and a Federal project in which consultation took place, in which the project couldn't go forth or the impasse be resolved somehow.

May I just conclude my statement by saying, Mr. Chairman, we want to see our precious wildlife heritage reserved for future gen-

erations so our children can see what a bear or a crane or snail darter looks like as well as a highway or a dam; that the decision Congress is now making may well determine whether much of our wildlife survives or disappears forever into extinction.

So, we urge the act not be amended at this time.

We thank you very much for the opportunity to appear here.

Mr. LEGGETT. Thank you very much.

Mr. Van Note, do you have anything to add to your statement?

Mr. VAN NOTE. Yes, Mr. Chairman.

I want to particularly emphasize one part of my statement. It is that the effects of the Endangered Species Act extend far beyond the borders of the United States.

In many aspects, the United States is well off ecologically in relation to other parts of the world. In many underdeveloped countries, richly productive land and tropical jungles are being turned into desert wastelands unfit for humans or other creatures.

This horrifying spectacle of deforestation and desertification is the consequence of unthinking development and/or exploitation of the land.

When the Congress passed the Endangered Species Act of 1973, it set an example for the rest of the world to follow. It was a demonstration that something could be done to slow down or stop the devastation of the natural world.

The U.S. leadership has resulted in endangered species acts being adopted by more than 40 nations. The peoples of the world continue to look to America for leadership in conservation.

It would be a tragedy of perhaps fatal consequences if the United States abandoned strong environmental protection to the pressures of special interests.

The conservation community already views much of the world as an ecological time bomb. If the richest and most environmentally aware nation in the world is unwilling to protect its own endangered species through stringent laws, then we will have lost our credibility with those underdeveloped countries that most need our help.

Mr. LEGGETT. You are opposed to any amendment to section 7; is that right?

Mr. VAN NOTE. That is right.

Mr. LEGGETT. And the bowhead population you estimate to be less than 2,000. Didn't we just double the number of the bowhead?

Mr. VAN NOTE. The latest figure is 2,200 and something, that they are estimating from the sighting data. But still that would be below 15 percent of the estimated original population size.

Mr. LEGGETT. Do you believe the Natives up there in Alaska ought to be precluded from taking the bowhead?

Mr. VAN NOTE. No; I know the Monitor groups have always supported a limited subsistence take based upon the true needs of the Eskimos, if it could be justified scientifically. Our groups have always supported a limited take.

Mr. LEGGETT. How many were wounded?

Mr. VAN NOTE. The quota this year is 12 landed or 18 struck, whichever comes first. So far they have landed 10 or 11, and struck and lost another 5 or 6. So, they virtually filled their quota already.

Mr. LEGGETT. Then on your last page you say that the subcommittee should be alerted to a serious lapse in enforcement of the act. Section 3(10) of the act places responsibility for enforcement of provisions regulating the importation and exportation of plants listed under the act.

What do you mean by that? What is the problem there?

Mr. VAN NOTE. We have not seen a single case of enforcement by the Agriculture Department on endangered plants being brought into this country. In fact, they did make a seizure a month ago of a large number of highly endangered cycads coming in from South Africa, but they decided apparently to release the cycads to the importer.

When they finally decided they might want to prosecute, they went back and found he disposed of the plants, and therefore they didn't have a case anymore. This is the first time ever, as far as we know, everybody seized any plants—

Mr. LEGGETT. How many plants do we have listed at the present time?

Mr. VAN NOTE. I am not sure.

Mr. REGENSTEIN. I think it is about a dozen. But please don't hold me to that. There are about 1,700 that are unlisted. Mr. Chairman, that 1,700 that the Smithsonian, after an exhaustive study, identified as being endangered, if Interior doesn't take action to list these plants, a lot of them are going to become extinct.

Mr. LEGGETT. Are the plants you are talking about from South Africa listed?

Mr. VAN NOTE. Under the convention.

Mr. LEGGETT. Were those in fact listed by South Africa?

Mr. VAN NOTE. Yes.

Mr. LEGGETT. So, they were taken out of South Africa illegally?

Mr. VAN NOTE. That is right.

Mr. LEGGETT. So we would be then reinforcing the South African law in that respect?

Mr. VAN NOTE. That is right.

Mr. LEGGETT. Mr. Forsythe, questions?

Mr. FORSYTHE. Just a couple, Mr. Chairman.

I am interested in what each of you thinks of the proposition that the Endangered Species Act should deal nationally insofar as species are concerned.

In other words, if a species is plentiful in one area, the fact that it may be rare in another would not bring it under the purview of a national Endangered Species Act. That would be a matter for the States.

Mr. BEAN. I would like to offer an answer to that. I believe Dr. Taylor offered an answer this morning which according to my reading of the act may not be fully correct.

The act defines the term "species" to include not just all taxonomic species, but also subspecies and geographic populations. So, the act contemplates, indeed directs, the Secretaries of Interior and Commerce to consider whether discrete populations of species might appropriately be protected as endangered.

The question that you may have been raising was whether, if you have a particular population which is healthy and has at its pe-

riphery subpopulations that are arguably in danger, the act ought to protect those subpopulations.

My own sense is it probably should not. That is a different issue, though, from whether there should be protection for discrete populations.

For example, the California least tern is of the same species as the least tern on the east coast, but the California least tern as a subspecies is very near extinction, even though the same species on the coast is relatively abundant.

Mr. FORSYTHE. But is the western population of this species different or is it the same subspecies as the east coast tern?

Mr. BEAN. They are of the same scientific species. They are two geographically isolated subspecies of the same species.

Mr. FORSYTHE. And you would apply that reasoning also to plants, in terms of providing protection?

Mr. BEAN. The act carries it.

Mr. FORSYTHE. You interpret the act as applying even though there may well be one region or area or State where there is a healthy growth of a given plant—the fact that it is rare and endangered in another area allows the act to be used to provide the protection of that area where it is rare and endangered.

Mr. BEAN. If there are true separate populations, the act does contemplate that possibility, that you would protect the endangered population notwithstanding the presence of a healthy population elsewhere.

Mr. FORSYTHE. Do the other two gentlemen agree with your answer?

Mr. REGENSTEIN. As I understand the question, yes, Mr. Forsythe. I feel if, for example, you have an endangered species in this country, like the eastern timber wolf, even though there are timber wolves across the border in Canada, the grizzly bear now left only in Montana and Wyoming, although they are now in Canada, the American crocodile, there are only a handful in Florida, but a lot south of there, I think we should protect the native fauna, because we don't have much control over what other countries do. They may wipe out their populations.

Mr. FORSYTHE. Remember, I am talking about within the United States. I wouldn't even go outside of our borders. I believe maybe I would like to limit it to flora rather than fauna. I think I can have more sympathy for being stricter where fauna are involved.

Mr. REGENSTEIN. I think all animals play a role in the balance of nature we don't understand. The manatees used to be thought of as useless, but when they disappeared from Florida the canals became clogged with vegetation.

Now we are spreading chemicals to get rid of them.

I think if you have a lot of grizzly bears in Montana, we shouldn't let the population in Wyoming be wiped out. We really do upset the balance of nature.

Right now India is experiencing a serious problem of potential starvation because of the large amount of crops being consumed by insects. The reason this is happening is because they are killing off all their snakes and lizards and exporting them abroad for the fashion industry.

Even these animals really are very important in providing for our own everyday needs, such as keeping insect populations in check.

Mr. FORSYTHE. You would still apply that also to flora?

Mr. REGENSTEIN. Well, as a general statement, I think we can take any general statement and have an unreasonable interpretation of it. I think in general we should try to protect species of flora and fauna wherever they are becoming rare and endangered, wherever they occur in general. I would not want to carry that to an extreme.

Mr. FORSYTHE. I agree that we sometimes get into trouble making general statements and then carry them to extremes.

Thank you.

Thank you very much, Mr. Chairman.

Mr. LEGGETT. Thank you very much, Mr. Forsythe.

The meeting will now stand adjourned until next week. We have at least one hearing scheduled next week on the same subject matter.

[Whereas the subcommittee adjourned at 12:30 p.m.]

